

890	895	900	905	
cta ctg cta gga gag gaa cgt tac aca cca gcc ata gat gtt tgg agc				2906
Leu Leu Leu Gly Glu Glu Arg Tyr Thr Pro Ala Ile Asp Val Trp Ser				
906	911	916	921	
tgt gga tgt att ctt ggg gaa cta ttc aca aag aag cct att ttt caa				2954
Cys Gly Cys Ile Leu Gly Glu Leu Phe Thr Lys Lys Pro Ile Phe Gln				
922	927	932	937	
gcc aat ctg gaa ctg gct cag cta gaa ctg atc agc cga ctt tgt ggt				3002
Ala Asn Leu Glu Leu Ala Gln Leu Glu Leu Ile Ser Arg Leu Cys Gly				
938	943	948	953	
agc cct tgt cca gct gtg tgg cct gat gtt atc aaa ctg ccc tac ttc				3050
Ser Pro Cys Pro Ala Val Trp Pro Asp Val Ile Lys Leu Pro Tyr Phe				
954	959	964	969	
aac acc atg aaa ccg aag aag caa tat cga agg cgt cta cga gaa gaa				3098
Asn Thr Met Lys Pro Lys Lys Gln Tyr Arg Arg Arg Leu Arg Glu Glu				
970	975	980	985	
ttc tct ttc att cct tct gca gca ctt gat tta ttg gac cac atg ctg				3146
Phe Ser Phe Ile Pro Ser Ala Ala Leu Asp Leu Leu Asp His Met Leu				
986	991	996	1001	
aca cta gat cct agt aag cgg tgc aca gct gaa cag acc cta cag agc				3194
Thr Leu Asp Pro Ser Lys Arg Cys Thr Ala Glu Gln Thr Leu Gln Ser				
1002	1007	1012	1017	
gac ttc ctt aaa gat gtc gaa ctc agc aaa atg gct cct cca gac ctc				3242
Asp Phe Leu Lys Asp Val Glu Leu Ser Lys Met Ala Pro Pro Asp Leu				
1018	1023	1028	1033	
ccc cac tgg cag gat tgc cat gag ttg tgg agt aag aaa cgg cga cgt				3290
Pro His Trp Gln Asp Cys His Glu Leu Trp Ser Lys Lys Arg Arg Arg				
1034	1039	1044	1049	
cag cga caa agt ggt gtt gta gtc gaa gag cca cct cca tcc aaa act				3338
Gln Arg Gln Ser Gly Val Val Val Glu Glu Pro Pro Pro Ser Lys Thr				
1050	1055	1060	1065	
tct cga aaa gaa act acc tca ggg aca agt act gag cct gtg aag aac				3386
Ser Arg Lys Glu Thr Thr Ser Gly Thr Ser Thr Glu Pro Val Lys Asn				
1066	1071	1076	1081	
agc agc cca gca cca cct cag cct gct cct ggc aag gtg gag tct ggg				3434
Ser Ser Pro Ala Pro Pro Gln Pro Ala Pro Gly Lys Val Glu Ser Gly				
1082	1087	1092	1097	
gct ggg gat gca ata ggc ctt gct gac atc aca caa cag ctg aat caa				3482
Ala Gly Asp Ala Ile Gly Leu Ala Asp Ile Thr Gln Gln Leu Asn Gln				
1098	1103	1108	1113	
agt gaa ttg gca gtg tta tta aac ctg ctg cag agc caa acc gac ctg				3530
Ser Glu Leu Ala Val Leu Leu Asn Leu Leu Gln Ser Gln Thr Asp Leu				
1114	1119	1124	1129	

agc atc cct caa atg gca cag ctg ctt aac atc cac tcc aac cca gag	3578
Ser Ile Pro Gln Met Ala Gln Leu Leu Asn Ile His Ser Asn Pro Glu	
1130 1135 1140 1145	
atg cag cag cag ctg gaa gcc ctg aac caa tcc atc agt gcc ctg acg	3626
Met Gln Gln Gln Leu Glu Ala Leu Asn Gln Ser Ile Ser Ala Leu Thr	
1146 1151 1156 1161	
gaa gct act tcc cag cag cag gac tca gag acc atg gcc cca gag gag	3674
Glu Ala Thr Ser Gln Gln Gln Asp Ser Glu Thr Met Ala Pro Glu Glu	
1162 1167 1172 1177	
tct ttg aag gaa gca ccc tct gcc cca gtg atc ctg cct tca gca gaa	3722
Ser Leu Lys Glu Ala Pro Ser Ala Pro Val Ile Leu Pro Ser Ala Glu	
1178 1183 1188 1193	
cag atg acc ctt gaa gct tca agc aca cca gct gac atg cag aat ata	3770
Gln Met Thr Leu Glu Ala Ser Ser Thr Pro Ala Asp Met Gln Asn Ile	
1194 1199 1204 1209	
ttg gca gtt ctc ttg agt cag ctg atg aaa acc caa gag cca gca ggc	3818
Leu Ala Val Leu Leu Ser Gln Leu Met Lys Thr Gln Glu Pro Ala Gly	
1210 1215 1220 1225	
agt ctg gag gaa aac aac agt gac aag aac agt ggg cca cag ggg ccc	3866
Ser Leu Glu Glu Asn Asn Ser Asp Lys Asn Ser Gly Pro Gln Gly Pro	
1226 1231 1236 1241	
cga aga act ccc aca atg cca cag gag gag gca gca gca tgt cct cct	3914
Arg Arg Thr Pro Thr Met Pro Gln Glu Glu Ala Ala Ala Cys Pro Pro	
1242 1247 1252 1257	
cac att ctt cca cca gag aag agg ccc cct gag ccc ccc gga cct cca	3962
His Ile Leu Pro Pro Glu Lys Arg Pro Pro Glu Pro Pro Gly Pro Pro	
1258 1263 1268 1273	
ccg ccg cca cct cca ccc cct ctg gtt gaa ggc gat ctt tcc agc gcc	4010
Pro Pro Pro Pro Pro Pro Pro Leu Val Glu Gly Asp Leu Ser Ser Ala	
1274 1279 1284 1289	
ccc cag gag ttg aac cca gcc gtg aca gcc gcc ttg ctg caa ctt tta	4058
Pro Gln Glu Leu Asn Pro Ala Val Thr Ala Ala Leu Leu Gln Leu Leu	
1290 1295 1300 1305	
tcc cag cct gaa gca gag cct cct ggc cac ctg cca cat gag cac cag	4106
Ser Gln Pro Glu Ala Glu Pro Pro Gly His Leu Pro His Glu His Gln	
1306 1311 1316 1321	
gcc ttg aga cca atg gag tac tcc acc cga ccc cgt cca aac agg act	4154
Ala Leu Arg Pro Met Glu Tyr Ser Thr Arg Pro Arg Pro Asn Arg Thr	
1322 1327 1332 1337	
tat gga aac act gat ggg cct gaa aca ggg ttc agt gcc att gac act	4202
Tyr Gly Asn Thr Asp Gly Pro Glu Thr Gly Phe Ser Ala Ile Asp Thr	
1338 1343 1348 1353	

gat gaa cga aac tct ggt cca gcc ttg aca gaa tcc ttg gtc cag acc 4250
 Asp Glu Arg Asn Ser Gly Pro Ala Leu Thr Glu Ser Leu Val Gln Thr
 1354 1359 1364 1369

ctg gtg aag aac agg acc ttc tca ggc tct ctg agc cac ctt ggg gag 4298
 Leu Val Lys Asn Arg Thr Phe Ser Gly Ser Leu Ser His Leu Gly Glu
 1370 1375 1380 1385

tcc agc agt tac cag ggc aca ggg tag gagca acggtgggaa tgccctctga 4350
 Ser Ser Ser Tyr Gln Gly Thr Gly *
 1386 1391

ggaatgcagt gatgtccatc agtcacctct caccagagac ctggcaaatt cagtctcttt 4410

cacagaacct aaagccaagc caggttcagt gggaaatccc acctgtccaa aactgtgtgtg 4470

agacaccaga attagaggcc tgcaagcctg ctcccttcat cccaatgcc cagatgggac 4530

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 <213> Homo sapiens

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ggttctgect accccgagac tgctgctgtt cggagacctg caggtgaatg ccccatcacc 120

atg tct gac ctg gag gca aaa ctt tca act gag cat ttg ggg gat aag 168
 Met Ser Asp Leu Glu Ala Lys Leu Ser Thr Glu His Leu Gly Asp Lys
 1 5 10 15

ata aaa gat gaa gat att aaa ctc agg gtt att gga cag gat agc agt 216
 Ile Lys Asp Glu Asp Ile Lys Leu Arg Val Ile Gly Gln Asp Ser Ser
 17 22 27 32

gag att cat ttc aaa gtg aaa atg aca aca cct ctc aag aaa ctc aag 264
 Glu Ile His Phe Lys Val Lys Met Thr Thr Pro Leu Lys Lys Leu Lys
 33 38 43 48

aaa tcg tac tgt cag aga cag ggc gtt cca gtg aat tcc ctc agg ttt 312
 Lys Ser Tyr Cys Gln Arg Gln Gly Val Pro Val Asn Ser Leu Arg Phe
 49 54 59 64

ctc ttt gaa ggt cag aga att gct gat aat cat act cca gaa gaa ctg 360
 Leu Phe Glu Gly Gln Arg Ile Ala Asp Asn His Thr Pro Glu Glu Leu
 65 70 75 80

gga atg gag gaa gaa gat gtg att gag gtt tat cag gaa caa atc gga 408
 Gly Met Glu Glu Glu Asp Val Ile Glu Val Tyr Gln Glu Gln Ile Gly
 81 86 91 96

ggt cat tca aca gtt tag 426
 Gly His Ser Thr Val *
 97 102

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 atg cct cac caa aga cct aga acg tgc gcc atg aac ccg gag ctg aca 106
 Met Pro His Gln Arg Pro Arg Thr Cys Ala Met Asn Pro Glu Leu Thr
 1 5 10 15

atg gaa agt ctg ggc act ttg cac ggc gcg cgc ggc ggc ggc agt ggc 154
 Met Glu Ser Leu Gly Thr Leu His Gly Ala Arg Gly Gly Gly Ser Gly
 17 22 27 32

ggg ggc ggc ggc ggg ggc ggc ggg ggc ggc ggc ggc ggc ccg ggc cat 202
 Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Pro Gly His
 33 38 43 48

gag cag gag ctg ctg gcc agc ccc agc ccc cac cac gcg cgc cgc ggc 250
 Glu Gln Glu Leu Leu Ala Ser Pro Ser Pro His His Ala Arg Arg Gly
 49 54 59 64

ccg cgt ggc tcg ctg cgg ggc cct ccg ccg cct cca acc gcg cac cag 298
 Pro Arg Gly Ser Leu Arg Gly Pro Pro Pro Pro Pro Thr Ala His Gln
 65 70 75 80

gag ctg ggc acg gcg gca gcg gcg gca gcg gcg gcg tcg cgc tcg gcc 346
 Glu Leu Gly Thr Ala Ala Ala Ala Ala Ala Ala Ala Ser Arg Ser Ala
 81 86 91 96

atg gtc acc agc atg gcc tcg atc ctg gac ggc ggc gac tac cgg ccc 394
 Met Val Thr Ser Met Ala Ser Ile Leu Asp Gly Gly Asp Tyr Arg Pro
 97 102 107 112

gag ctc tcc atc ccg ctg cac cac gcc atg agc atg tcc tgc gac tcg 442
 Glu Leu Ser Ile Pro Leu His His Ala Met Ser Met Ser Cys Asp Ser
 113 118 123 128

tct ccg cct ggc atg ggc atg agc aac acc tac acc acg ctg aca ccg 490
 Ser Pro Pro Gly Met Gly Met Ser Asn Thr Tyr Thr Thr Leu Thr Pro

129											134											139											144										
ctc	cag	ccg	ctg	cca	ccc	atc	tcc	acc	gtg	tct	gac	aag	ttc	cac	cac		538																										
Leu	Gln	Pro	Leu	Pro	Pro	Ile	Ser	Thr	Val	Ser	Asp	Lys	Phe	His	His																												
145											150											155											160										
cct	cac	ccg	cac	cac	cat	ccg	cac	cac	cac	cac	cac	cac	cac	cac	cag		586																										
Pro	His	Pro	His	His	His	Pro	His	His	His	His	His	His	His	His	Gln																												
161											166											171											176										
cgc	ctg	tcc	ggc	aac	gtc	agc	ggc	agc	ttc	acc	ctc	atg	cgc	gac	gag		634																										
Arg	Leu	Ser	Gly	Asn	Val	Ser	Gly	Ser	Phe	Thr	Leu	Met	Arg	Asp	Glu																												
177											182											187											192										
cgc	ggg	ctc	ccg	gcc	atg	aac	aac	ctc	tac	agt	ccc	tac	aag	gag	atg		682																										
Arg	Gly	Leu	Pro	Ala	Met	Asn	Asn	Leu	Tyr	Ser	Pro	Tyr	Lys	Glu	Met																												
193											198											203											208										
ccc	ggc	atg	agc	cag	agc	ctg	tcc	ccg	ctg	gcc	gcc	acg	ccg	ctg	ggc		730																										
Pro	Gly	Met	Ser	Gln	Ser	Leu	Ser	Pro	Leu	Ala	Ala	Thr	Pro	Leu	Gly																												
209											214											219											224										
aac	ggg	cta	ggc	ggc	ctc	cac	aac	gcg	cag	cag	agt	ctg	ccc	aac	tac		778																										
Asn	Gly	Leu	Gly	Gly	Leu	His	Asn	Ala	Gln	Gln	Ser	Leu	Pro	Asn	Tyr																												
225											230											235											240										
ggt	ccg	ccg	ggc	cac	gac	aaa	atg	ctc	agc	ccc	aac	ttc	gac	gcg	cac		826																										
Gly	Pro	Pro	Gly	His	Asp	Lys	Met	Leu	Ser	Pro	Asn	Phe	Asp	Ala	His																												
241											246											251											256										
cac	act	gcc	atg	ctg	acc	cgc	ggt	gag	caa	cac	ctg	tcc	cgc	ggc	ctg		874																										
His	Thr	Ala	Met	Leu	Thr	Arg	Gly	Glu	Gln	His	Leu	Ser	Arg	Gly	Leu																												
257											262											267											272										
ggc	acc	cca	cct	gcg	gcc	atg	atg	tcg	cac	ctg	aac	ggc	ctg	cac	cac		922																										
Gly	Thr	Pro	Pro	Ala	Ala	Met	Met	Ser	His	Leu	Asn	Gly	Leu	His	His																												
273											278											283											288										
ccg	ggc	cac	act	cag	tct	cac	ggg	ccg	gtg	ctg	gca	ccc	agt	cgc	gag		970																										
Pro	Gly	His	Thr	Gln	Ser	His	Gly	Pro	Val	Leu	Ala	Pro	Ser	Arg	Glu																												
289											294											299											304										
cgg	cca	ccc	tcg	tcc	tca	tcg	ggc	tcg	cag	gtg	gcc	acg	tcg	ggc	cag		1018																										
Arg	Pro	Pro	Ser	Ser	Ser	Ser	Gly	Ser	Gln	Val	Ala	Thr	Ser	Gly	Gln																												
305											310											315											320										
ctg	gaa	gaa	atc	aac	acc	aaa	gag	gtg	gcc	cag	cgc	atc	aca	gcg	gag		1066																										
Leu	Glu	Glu	Ile	Asn	Thr	Lys	Glu	Val	Ala	Gln	Arg	Ile	Thr	Ala	Glu																												
321											326											331											336										
ctg	aag	cgc	tac	agt	atc	ccc	cag	gcg	atc	ttt	gcg	cag	agg	gtg	ctg		1114																										
Leu	Lys	Arg	Tyr	Ser	Ile	Pro	Gln	Ala	Ile	Phe	Ala	Gln	Arg	Val	Leu																												
337											342											347											352										
tgc	cgg	tct	cag	ggg	act	ct																																					

tgg agt aaa ctc aaa tct ggc agg gag acc ttc cgc agg atg tgg aag	1210
Trp Ser Lys Leu Lys Ser Gly Arg Glu Thr Phe Arg Arg Met Trp Lys	
369 374 379 384	
tgg ctt cag gag ccc gag ttc cag cgc atg tcc gcc tta cgc ctg gca	1258
Trp Leu Gln Glu Pro Glu Phe Gln Arg Met Ser Ala Leu Arg Leu Ala	
385 390 395 400	
gcg tgc aaa cgc aaa gag caa gaa cca aac aaa gac agg aac aat tcc	1306
Ala Cys Lys Arg Lys Glu Gln Glu Pro Asn Lys Asp Arg Asn Asn Ser	
401 406 411 416	
cag aag aag tcc cgc ctg gtg ttc act gac ctc caa cgc cga aca ctc	1354
Gln Lys Lys Ser Arg Leu Val Phe Thr Asp Leu Gln Arg Arg Thr Leu	
417 422 427 432	
ttc gcc atc ttc aag gag aac aaa cgc ccg tca aag gag atg cag atc	1402
Phe Ala Ile Phe Lys Glu Asn Lys Arg Pro Ser Lys Glu Met Gln Ile	
433 438 443 448	
acc att tcc cag cag ctg ggc ctg gag ctc aca acc gtc agc aac ttc	1450
Thr Ile Ser Gln Gln Leu Gly Leu Glu Leu Thr Thr Val Ser Asn Phe	
449 454 459 464	
ttc atg aac gcc cgg cgc cgc agc ctg gag aag tgg caa gac gat ctg	1498
Phe Met Asn Ala Arg Arg Arg Ser Leu Glu Lys Trp Gln Asp Asp Leu	
465 470 475 480	
agc aca ggg ggc tcc tcg tcc acc tcc agc acg tgt acc aaa gca tga	1546
Ser Thr Gly Gly Ser Ser Ser Thr Ser Ser Thr Cys Thr Lys Ala *	
481 486 491 496	
tggaaggact ctcaacttggg cacaagtcac ctccaaatga ggacaacaga taccaaaaga	1606
aaacaaagga aaaagacacc ggattcctag ctggggccct tcaactggtga tttgaaagca	1666
caattctctt gcaaagaaac ttatattcta gctgtaatca taggccaggt gttcttcttt	1726
tgtttttaat ggctatggag tccaagtgca agctgaaaaa ttaatctctt agaaccagac	1786
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 <222> (281)..(2410)

 <220>
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<222> (1) ... (3239)

<223> n = a,t,c or g

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cttggttccc	cctccctcag	cttcgcggcc	aaaagcagaa	gtagaaagta	atgaaaagga	180
caacagacct	gaggaagaag	agcaagtaat	acatgaagat	gatgaaagac	cttctgagaa	240
aaatgaattt	tctagacgaa	aacgtttctaa	atcagaagac	atg gac aat gta cag	295	
				Met Asp Asn Val Gln		
				1		
tct aaa cgt cgt cga tat atg gaa gaa gaa tat gag gca gaa ttt caa	343					
Ser Lys Arg Arg Arg Tyr Met Glu Glu Glu Tyr Glu Ala Glu Phe Gln						
6 11 16 21						
gta aag att aca gcc aaa gga gac att aac cag aaa ctt caa aag gtt	391					
Val Lys Ile Thr Ala Lys Gly Asp Ile Asn Gln Lys Leu Gln Lys Val						
22 27 32 37						
ata cag tgg ttg ctg gaa gaa aaa ttg tgt gcg ctg cag tgt gct gta	439					
Ile Gln Trp Leu Leu Glu Glu Lys Leu Cys Ala Leu Gln Cys Ala Val						
38 43 48 53						
ttt gat aag act ttg gca gaa ttg aaa aca cga gtg gaa aag att gaa	487					
Phe Asp Lys Thr Leu Ala Glu Leu Lys Thr Arg Val Glu Lys Ile Glu						
54 59 64 69						
tgt aac aag agg cat aaa aca gtt ctc act gaa cta cag gcc aag ata	535					
Cys Asn Lys Arg His Lys Thr Val Leu Thr Glu Leu Gln Ala Lys Ile						
70 75 80 85						
gcc agg tta acc aaa cgc ttt gaa gca gcc aaa gaa gat ctt aag aaa	583					
Ala Arg Leu Thr Lys Arg Phe Glu Ala Ala Lys Glu Asp Leu Lys Lys						
86 91 96 101						
aga cat gaa cat cca ccc aac cca cca gta tca cca gga aaa act gta	631					
Arg His Glu His Pro Asn Pro Pro Val Ser Pro Gly Lys Thr Val						
102 107 112 117						
aat gat gtc aac agc aat aat aac atg tct tac aga aat gca ggc aca	679					
Asn Asp Val Asn Ser Asn Asn Asn Met Ser Tyr Arg Asn Ala Gly Thr						
118 123 128 133						
gtg aga cag atg ctg gag tcc aaa aga aat gta agc gag agt gca cca	727					
Val Arg Gln Met Leu Glu Ser Lys Arg Asn Val Ser Glu Ser Ala Pro						
134 139 144 149						
cca tcc ttt caa act cct gtg aat aca gta tct tca acc aat ctt gtc	775					
Pro Ser Phe Gln Thr Pro Val Asn Thr Val Ser Ser Thr Asn Leu Val						
150 155 160 165						
act cct cca gca gtt gtc agt agt caa cct aaa ttg cag act cca gtg	823					

Thr	Pro	Pro	Ala	Val	Val	Ser	Ser	Gln	Pro	Lys	Leu	Gln	Thr	Pro	Val	
166					171					176					181	
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Thr	Ser	Gly	Ser	Leu	Thr	Ala	Thr	Ser	Val	Leu	Pro	Ala	Pro	Asn	Thr	
182					187					192					197	
gct	act	gta	gtt	gct	act	act	cag	gtg	cct	agt	gga	aat	ccc	cag	cct	919
Ala	Thr	Val	Val	Ala	Thr	Thr	Gln	Val	Pro	Ser	Gly	Asn	Pro	Gln	Pro	
198					203					208					213	
aca	atc	tct	tta	cag	cct	ttg	cca	gtg	att	ttg	cat	gta	cct	gtt	gca	967
Thr	Ile	Ser	Leu	Gln	Pro	Leu	Pro	Val	Ile	Leu	His	Val	Pro	Val	Ala	
214					219					224					229	
gta	tcc	tcc	cag	cct	cag	ctt	cta	cag	agc	cat	cca	ggg	act	ttg	gtg	1015
Val	Ser	Ser	Gln	Pro	Gln	Leu	Leu	Gln	Ser	His	Pro	Gly	Thr	Leu	Val	
230					235					240					245	
act	aat	caa	cca	tct	ggc	aat	gtt	gaa	ttc	att	tct	gtg	caa	agc	cca	1063
Thr	Asn	Gln	Pro	Ser	Gly	Asn	Val	Glu	Phe	Ile	Ser	Val	Gln	Ser	Pro	
246					251					256					261	
cct	aca	gtg	agt	ggt	ctt	acc	aaa	aat	cca	gta	tcc	ttg	cca	tcc	ttg	1111
Pro	Thr	Val	Ser	Gly	Leu	Thr	Lys	Asn	Pro	Val	Ser	Leu	Pro	Ser	Leu	
262					267					272					277	
cca	aat	ccc	act	aaa	cca	aac	aac	gtt	cct	tct	gtg	ccc	agt	cct	agt	1159
Pro	Asn	Pro	Thr	Lys	Pro	Asn	Asn	Val	Pro	Ser	Val	Pro	Ser	Pro	Ser	
278					283					288					293	
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Ile	Gln	Arg	Asn	Pro	Thr	Ala	Ser	Ala	Ala	Pro	Leu	Gly	Thr	Thr	Leu	
294					299					304					309	
gct	gtg	cag	gct	gtt	cca	aca	gca	cac	tct	att	gta	caa	gcc	aca	agg	1255
Ala	Val	Gln	Ala	Val	Pro	Thr	Ala	His	Ser	Ile	Val	Gln	Ala	Thr	Arg	
310					315					320					325	
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Thr	Ser	Leu	Pro	Thr	Val	Gly	Pro	Ser	Gly	Leu	Tyr	Ser	Pro	Ser	Thr	
326					331					336					341	
aat	cga	ggt	cct	ata	cag	atg	aaa	att	cca	att	tct	gca	ttt	agt	act	1351
Asn	Arg	Gly	Pro	Ile	Gln	Met	Lys	Ile	Pro	Ile	Ser	Ala	Phe	Ser	Thr	
342					347					352					357	
tcg	tct	gct	gca	gaa	cag	aac	agc	aat	acc	acc	cca	aga	att	gaa	aac	1399
Ser	Ser	Ala	Ala	Glu	Gln	Asn	Ser	Asn	Thr	Thr	Pro	Arg	Ile	Glu	Asn	
358					363					368					373	
cag	aca	aac	aaa	aca	ata	gat	gct	tct	gtc	agt	aag	aaa	gca	gct	gat	1447
Gln	Thr	Asn	Lys	Thr	Ile	Asp	Ala	Ser	Val	Ser	Lys	Lys	Ala	Ala	Asp	
374					379					384					389	
agc	aca	tca	cag	tgt	gga	aaa	gcc	act	ggc	agt	gat	tca	agt	ggt	gtc	1495
Ser	Thr	Ser	Gln	Cys	Gly	Lys	Ala	Thr	Gly	Ser	Asp	Ser	Ser	Gly	Val	

390	395	400	405	
att gat ctc aca atg Ile Asp Leu Thr Met 406	gat gat gaa gag agt Asp Asp Glu Glu Ser 411	gga gct tca caa gac Gly Ala Ser Gln Asp 416	ccc Pro 421	1543
aaa aaa cta aat cac Lys Lys Leu Asn His 422	act cct gta tca acc Thr Pro Val Ser Thr 427	atg agt tct tct cag Met Ser Ser Ser Gln 432	cct Pro 437	1591
gtg tca cga cca ttg Val Ser Arg Pro Leu 438	caa ccc ata caa cca Gln Pro Ile Gln Pro 443	gca ccg cct ctt caa cca Ala Pro Pro Leu Gln 448	cca Pro 453	1639
tct ggg gtg cca aca Ser Gly Val Pro Thr 454	agt gga cca tct cag Ser Gly Pro Ser Gln 459	acc acc ata cac tta cta Thr Thr Ile His Leu 464	Leu 469	1687
cct aca gct cca act Pro Thr Ala Pro Thr 470	acc gtg aat gta aca Thr Val Asn Val Thr 475	cat cgt cca gta act cag His Arg Pro Val Thr 480	Gln 485	1735
gtg acc aca aga ctc Val Thr Thr Arg Leu 486	cct gta cca aga gct Pro Val Pro Arg Ala 491	cct gca aac cac cag gtg Pro Ala Asn His Gln 496	Val 501	1783
gtt tat aca act ctt Val Tyr Thr Thr Leu 502	cct gca cca cca gct Pro Ala Pro Pro Ala 507	cag gct ccc ttg cga gga Gln Ala Pro Leu Arg 512	Gly 517	1831
act gtt atg cag gct Thr Val Met Gln Ala 518	cct gct gtt cgg cag Pro Ala Val Arg Gln 523	gtc aat ccc caa aat agt Val Asn Pro Gln Asn 528	Ser 533	1879
gtt aca gtt cga gtg Val Thr Val Arg Val 534	cct caa aca acc aca Pro Gln Thr Thr Thr 539	tat gtt gta aac aat gga Tyr Val Val Asn Asn 544	Gly 549	1927
cta acc ctg gga tca Leu Thr Leu Gly Ser 550	aca gga cct cag ctc Thr Gly Pro Gln Leu 555	aca gtg cat cac cga cca Thr Val His His Arg 560	Pro 565	1975
cca caa gtg cat act Pro Gln Val His Thr 566	gag ccc cca cgc ccc Glu Pro Pro Arg Pro 571	gtg cac cca gca ccc tta Val His Pro Ala Pro 576	Leu 581	2023
cca gaa gct cca caa Pro Glu Ala Pro Gln 582	cca cag cgt ctg ccc Pro Gln Arg Leu Pro 587	cca gaa gct gcc agc aca Pro Glu Ala Ala Ser 592	Thr 597	2071
tct ctg cct cag aag Ser Leu Pro Gln Lys 598	cca cac ttg aag tta Pro His Leu Lys Leu 603	gca cgc gtt cag agt caa Ala Arg Val Gln Ser 608	Gln 613	2119
aat ggc ata gta ctg Asn Gly Ile Val Leu 614	tca tgg agt gtc ctg Ser Trp Ser Val Leu 619	gag gtg gat cga agc tgt Glu Val Asp Arg Ser 624	Cys 629	2167

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<220>

<221> CDS

<222> (314)..(1144)

<400> 326

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aaccacgtgg ctagcctgcc tgaagtctc acctctccag gaaggcgggg ggtttctaat 180

ggctgcagct gcgctggggg ctgggggctc ccgctgggac tccacttccg tggatgtcta 240

agcttcacct ttcttgccgc cgcaggggca tgactcaggt gaaagggagc cattttctca 300

gacccctggc ctc atg cag ccc ttc agc atc ccc gtg caa atc aca ctt 349

Met Gln Pro Phe Ser Ile Pro Val Gln Ile Thr Leu

1

5

10

cag ggc agc cgg agg cgc cag ggg agg aca gcc ttt cct gcc tca ggg 397

Gln Gly Ser Arg Arg Arg Gln Gly Arg Thr Ala Phe Pro Ala Ser Gly

13

18

23

28

aag aag aga gag aca gac tac agt gat gga gac cca cta gat gtg cac 445

Lys Lys Arg Glu Thr Asp Tyr Ser Asp Gly Asp Pro Leu Asp Val His

29

34

39

44

aag agg ctg cca tcc agt act gga gag gac cga gcc gtg atg ctg ggg 493

Lys Arg Leu Pro Ser Ser Thr Gly Glu Asp Arg Ala Val Met Leu Gly

45

50

55

60

ttt gcc atg atg ggc ttc tca gtc cta atg ttc ttc ttg ctc gga aca 541

Phe Ala Met Met Gly Phe Ser Val Leu Met Phe Phe Leu Leu Gly Thr

61

66

71

76

acc att cta aag cct ttt atg ctc agc att cag aga gaa gaa tcg acc 589

Thr Ile Leu Lys Pro Phe Met Leu Ser Ile Gln Arg Glu Glu Ser Thr

77

82

87

92

tgc act gcc atc cac aca gat atc atg gac gac tgg ctg gac tgt gcc 637

Cys Thr Ala Ile His Thr Asp Ile Met Asp Asp Trp Leu Asp Cys Ala

93

98

103

108

ttc acc tgt ggt gtg cac tgc cac ggt cag ggg aag tac cca tgt ctt 685

Phe Thr Cys Gly Val His Cys His Gly Gln Gly Lys Tyr Pro Cys Leu

109

114

119

124

cag gtg ttt gtg aac ctc agc cat cca ggt cag aaa got ctc cta cat 733

Gln Val Phe Val Asn Leu Ser His Pro Gly Gln Lys Ala Leu Leu His

125

130

135

140

tat aat gaa gag gct gtc cag ata aat ccc aag tgc ttt tac aca cct 781

Tyr Asn Glu Glu Ala Val Gln Ile Asn Pro Lys Cys Phe Tyr Thr Pro

141

146

151

156

aag tgc cac caa gat aga aat gat ttg ctc aac agt gct ctg gac ata 829
 Lys Cys His Gln Asp Arg Asn Asp Leu Leu Asn Ser Ala Leu Asp Ile
 157 162 167 172

aaa gaa ttc ttc gat cac aaa aat gga act ccc ttt tca tgc ttc tac 877
 Lys Glu Phe Phe Asp His Lys Asn Gly Thr Pro Phe Ser Cys Phe Tyr
 173 178 183 188

agt cca gcc agc caa tct gaa gat gtc att ctt ata aaa aag tat gac 925
 Ser Pro Ala Ser Gln Ser Glu Asp Val Ile Leu Ile Lys Lys Tyr Asp
 189 194 199 204

caa atg gct atc ttc cac tgt tta ttt tgg cct tca ctg act ctg cta 973
 Gln Met Ala Ile Phe His Cys Leu Phe Trp Pro Ser Leu Thr Leu Leu
 205 210 215 220

ggt ggt gcc ctg att gtt ggc atg gtg aga tta aca caa cac ctg tcc 1021
 Gly Gly Ala Leu Ile Val Gly Met Val Arg Leu Thr Gln His Leu Ser
 221 226 231 236

tta ctg tgt gaa aaa tat agc act gta gtc aga gat gag gta ggt gga 1069
 Leu Leu Cys Glu Lys Tyr Ser Thr Val Val Arg Asp Glu Val Gly Gly
 237 242 247 252

aaa gta cct tat ata gaa cag cat cag ttc aaa ctg tgc att atg agg 1117
 Lys Val Pro Tyr Ile Glu Gln His Gln Phe Lys Leu Cys Ile Met Arg
 253 258 263 268

agg agc aaa gga aga gca gag aaa tct 1144
 Arg Ser Lys Gly Arg Ala Glu Lys Ser
 269 274

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 <213> Homo sapiens

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 <222> (99) .. (974)

<400> 327

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actagtccag tgtggtggaa ttgcacctga gcgtctcc atg gcc tgc ctg agc 113
 Met Ala Cys Leu Ser
 1

ccc tcg cag ctc cag aag ttc caa cag gat gga ttc ctg gtg ctg gaa 161
 Pro Ser Gln Leu Gln Lys Phe Gln Gln Asp Gly Phe Leu Val Leu Glu
 6 11 16 21

gga ttc ttg tct gcg gaa gag tgt gtg gcc atg caa caa agg att ggc 209

Gly	Phe	Leu	Ser	Ala	Glu	Glu	Cys	Val	Ala	Met	Gln	Gln	Arg	Ile	Gly		
22					27					32					37		
gag	ata	gtg	gct	gaa	atg	gat	gtt	cct	ctc	cac	tgc	cgc	aca	gaa	ttc	257	
Glu	Ile	Val	Ala	Glu	Met	Asp	Val	Pro	Leu	His	Cys	Arg	Thr	Glu	Phe		
38					43					48					53		
tcc	acc	cag	gaa	gag	gag	cag	ctt	cga	gcc	cag	ggc	agc	aca	gac	tat	305	
Ser	Thr	Gln	Glu	Glu	Glu	Gln	Leu	Arg	Ala	Gln	Gly	Ser	Thr	Asp	Tyr		
54					59					64					69		
ttc	ttg	agc	agt	ggc	gac	aag	att	cga	ttc	ttc	ttt	gag	aaa	ggc	gtt	353	
Phe	Leu	Ser	Ser	Gly	Asp	Lys	Ile	Arg	Phe	Phe	Phe	Glu	Lys	Gly	Val		
70					75					80					85		
ttt	gat	gag	aaa	gga	aat	ttc	ctg	gtc	cct	cgc	gag	aaa	tcc	atc	aac	401	
Phe	Asp	Glu	Lys	Gly	Asn	Phe	Leu	Val	Pro	Pro	Glu	Lys	Ser	Ile	Asn		
86					91					96					101		
aaa	att	ggc	cac	gct	ctg	cac	gcc	cac	gac	ccc	gtc	ttc	aag	agc	atc	449	
Lys	Ile	Gly	His	Ala	Leu	His	Ala	His	Asp	Pro	Val	Phe	Lys	Ser	Ile		
102					107					112					117		
aca	cac	tcc	ttc	aag	gtg	cag	acc	ttg	gcc	aga	agt	ctg	ggc	ctc	cag	497	
Thr	His	Ser	Phe	Lys	Val	Gln	Thr	Leu	Ala	Arg	Ser	Leu	Gly	Leu	Gln		
118					123					128					133		
atg	ccc	gtg	gtg	gtg	cag	agc	atg	tac	atc	ttt	aag	caa	cct	cac	ttt	545	
Met	Pro	Val	Val	Val	Gln	Ser	Met	Tyr	Ile	Phe	Lys	Gln	Pro	His	Phe		
134					139					144					149		
ggc	ggc	gaa	gtc	tcc	cct	cat	cag	gac	gcc	tcc	ttc	ctg	tac	acg	gag	593	
Gly	Gly	Glu	Val	Ser	Pro	His	Gln	Asp	Ala	Ser	Phe	Leu	Tyr	Thr	Glu		
150					155					160					165		
ccc	ctg	ggc	cgg	gtg	ctg	ggc	gtg	tgg	atc	gca	gtg	gag	gat	gcc	acg	641	
Pro	Leu	Gly	Arg	Val	Leu	Gly	Val	Trp	Ile	Ala	Val	Glu	Asp	Ala	Thr		
166					171					176					181		
ctg	gag	aac	ggc	tgt	ctc	tgg	ttc	atc	cct	ggc	tcc	cac	acc	agt	ggc	689	
Leu	Glu	Asn	Gly	Cys	Leu	Trp	Phe	Ile	Pro	Gly	Ser	His	Thr	Ser	Gly		
182					187					192					197		
gtg	tca	aga	agg	atg	gtc	cgg	gcc	cct	gtt	ggc	tca	gcg	cct	ggc	acc	737	
Val	Ser	Arg	Arg	Met	Val	Arg	Ala	Pro	Val	Gly	Ser	Ala	Pro	Gly	Thr		
198					203					208					213		
agc	ttc	ctt	ggg	tca	gag	cca	gcc	cgg	gat	aac	agc	ctc	ttt	gtg	ccc	785	
Ser	Phe	Leu	Gly	Ser	Glu	Pro	Ala	Arg	Asp	Asn	Ser	Leu	Phe	Val	Pro		
214					219					224					229		
acc	cca	gtg	cag	aga	ggg	gcc	ctg	gtc	ctc	atc	cat	gga	gaa	gtg	gta	833	
Thr	Pro	Val	Gln	Arg	Gly	Ala	Leu	Val	Leu	Ile	His	Gly	Glu	Val	Val		
230					235					240					245		
cac	aag	agc	aag	cag	aac	ctc	tct	gac	cgc	tcg	cgc	cag	gcc	tac	act	881	
His	Lys	Ser	Lys	Gln	Asn	Leu	Ser	Asp	Arg	Ser	Arg	Gln	Ala	Tyr	Thr		

246	251	256	261	
ttc cac ctc atg gag gcc tct ggc acc acc tgg agc ccg gag aac tgg				929
Phe His Leu Met Glu Ala Ser Gly Thr Thr Trp Ser Pro Glu Asn Trp				
262	267	272	277	
ctc cag cca aca gct gaa ctg ccc ttt ccc caa ctg tac acc taa agg				977
Leu Gln Pro Thr Ala Glu Leu Pro Phe Pro Gln Leu Tyr Thr *				
278	283	288		
ctctcgcagg gcaggagccc tcgccctctc cgggtgaagc tgtgggctgt aaacaccagt				1037
gccttgctca gcctcctggt tgcaacaggg aggtcttgtc tccctcctcg ggctttcctc				1097
ctgccctgtg ggcagcagcc taggctgggt caggggcttc cctaagatct tcacctctct				1157
gcctccctac tgccccaaca tagccttgag gaggtctctc agccaccaaa gggttctggc				1217
cccttctcac tctcctctcc tctcagatgg aactctgggtt attatggtgt tagttatcga				1277
ataaaaaacga cttcagaatg caaaaaaaaaaaa aaa				1310

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gcagcattct gggatatttc ttccttcaag gagtcacagt gttccacatg ggtcaaggca	120
aagacaggtc tcttgccaag gcacccaaga tgaaatcttg aaa atg aga aac aca	175
	Met Arg Asn Thr
	1
ttt gct gaa ctg aag aat tca tta gag gct ctc agc agt aga atg gac	223
Phe Ala Glu Leu Lys Asn Ser Leu Glu Ala Leu Ser Ser Arg Met Asp	
5 10 15 20	
cag gca gag gaa aga att ggg acc cag gct gga gtg cag tgg cgt gat	271
Gln Ala Glu Glu Arg Ile Gly Thr Gln Ala Gly Val Gln Trp Arg Asp	
21 26 31 36	
cat ggc tca ctg cag cct caa cct cct gaa ttc aag caa tgc ttc cac	319
His Gly Ser Leu Gln Pro Gln Pro Pro Glu Phe Lys Gln Cys Phe His	
37 42 47 52	
ctc agt ctc cca agt agc tgg gac tac agg gcg tgc ctt tct tag agc	367
Leu Ser Leu Pro Ser Ser Trp Asp Tyr Arg Ala Cys Leu Ser *	

53

58

63

aatcctggtg ccactaaaag ctgcattttc aatatgagat aaaaatgtat ttacaaaaa 427
gtgcaaggtc ttcatgtctg ctggcattgc tgcaacagtg gcttgtgtga gagatcactt 487
tttacggcaa tacccaattt attggagaga caaactgctc aagcaaggat gattagcatt 547
ctatggcatt ttaaaaggat acttgcaatg cttgacctta ccacaatagc aacaggagggt 607
agctacaaaa ttattacaat agtagagtat ggtaccacag ttaattttat gtagctataa 667
tttaatactg catctttaat gttgttcaca tttctctgga 707

<210> 329
<211> 929
<212> DNA
<213> Homo sapiens

<220>
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<222> (78)..(779)

<220>
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<222> (1)...(929)
<223> n = a,t,c or g

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cagccatgga ctggctc atg ggg aag tcc aaa gcc aag ccc aat ggc aag 110
Met Gly Lys Ser Lys Ala Lys Pro Asn Gly Lys
1 5
aag ccc gct gcg gag gag agg aag gcc tac ctg gag cct gag cac acc 158
Lys Pro Ala Ala Glu Glu Arg Lys Ala Tyr Leu Glu Pro Glu His Thr
12 17 22 27
aag gcc agg atc acc gac ttc cag ttc aag gag ctg gtg gtg ctg ccc 206
Lys Ala Arg Ile Thr Asp Phe Gln Phe Lys Glu Leu Val Val Leu Pro
28 33 38 43
cgc gag att gac ctt aac gag tgg ctg gcc agc aac acc acg acg ttt 254
Arg Glu Ile Asp Leu Asn Glu Trp Leu Ala Ser Asn Thr Thr Thr Phe
44 49 54 59
ttc cac cac atc aac ctg cag tat agc acc atc tcg gag ttc tgc aca 302
Phe His His Ile Asn Leu Gln Tyr Ser Thr Ile Ser Glu Phe Cys Thr
60 65 70 75
gga gag acg tgt cag acg atg gcc gtg tgc aac aca cag tac tac tgg 350
Gly Glu Thr Cys Gln Thr Met Ala Val Cys Asn Thr Gln Tyr Tyr Trp
76 81 86 91

tat gac gag cgg ggg aag aag gtc aag tgc acg gcc cca cag tac gtt	398
Tyr Asp Glu Arg Gly Lys Lys Val Lys Cys Thr Ala Pro Gln Tyr Val	
92 97 102 107	
gac ttc gtc atg agc tcc gtg cag aag ctg gtg acg gat gag gac gtg	446
Asp Phe Val Met Ser Ser Val Gln Lys Leu Val Thr Asp Glu Asp Val	
108 113 118 123	
ttc ccc aca aaa tac ggc aga gaa ttc ccc agc tcc ttt gag tcc ctg	494
Phe Pro Thr Lys Tyr Gly Arg Glu Phe Pro Ser Ser Phe Glu Ser Leu	
124 129 134 139	
gtg agg aag atc tgc aga cac ctg ttc cac gtg ctg gca cac atc tac	542
Val Arg Lys Ile Cys Arg His Leu Phe His Val Leu Ala His Ile Tyr	
140 145 150 155	
tgg gcc cac ttc aag gag acg ctg gcc ctg gag ctg cac gga cac ttg	590
Trp Ala His Phe Lys Glu Thr Leu Ala Leu Glu Leu His Gly His Leu	
156 161 166 171	
aac acg ctc tac gtc cac ttc atc ctc ttt gct cgg gag ttc aac ctg	638
Asn Thr Leu Tyr Val His Phe Ile Leu Phe Ala Arg Glu Phe Asn Leu	
172 177 182 187	
ctg gac ccc aaa gag acc gcc atc atg gac gac ctc acc gag gtg cta	686
Leu Asp Pro Lys Glu Thr Ala Ile Met Asp Asp Leu Thr Glu Val Leu	
188 193 198 203	
tgc agc ggg gcc ggc ggg gtc cac agt ggg ggc agt ggg gat ggg gcc	734
Cys Ser Gly Ala Gly Gly Val His Ser Gly Gly Ser Gly Asp Gly Ala	
204 209 214 219	
ggc agc ggg ggc ccg gga gca cag aac cac gtg aag gag aga tga gcc	782
Gly Ser Gly Gly Pro Gly Ala Gln Asn His Val Lys Glu Arg *	
220 225 230	
ccccgggccg gacaggggca cacgtgtgca aagagacggt ggtgtgtgtt ctctcctgca	842
tctgcgtgtn cacacatgtg ctgggcacgc gtgtggcgag gacttgcagg gccccggact	902
gacctggtgt gtggctgcat aatcacg	929

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 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (894) .. (1724)

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catggagctg cccgccgcgg cgggggacgc agtccggagt cccgccgcgg ccgccgccct	180
catcttcccc gggggctccg gggagctaga actggcgcta gaggaggagc tggcgctgct	240
ggcgggccggg ggagcgggcg tccgaccccg gggaacaccc tcaggccgag cctgggtctc	300
tggccgaggg ggccggaccg cagccgcgcg cctcccagga ccccgagctg ctgtcggtga	360
tccgacagaa ggagaaggat ctggtgttg cggcccggt gggtaaggcg ctgctcgaga	420
ggaaccagga catgagccgg cagtacgagc agatgcataa ggagctgaca gacaagctcg	480
agcacttaga gcaagagaaa catgaattga gaagacgatt tgagaaccga gaaggggagt	540
gggaaggccg agtgtcagag ctggagagt atgtgaagca gctacaggat gagttggaga	600
ggcagcagat tcatctgcgg gaagcagatc gagaaaaatc acgggctgtc caggaactgt	660
cggaacagaa ccaaaggcta ttggatcagc tcagcaggaa aattaagact tggatttact	720
attctacctc agcccttctt gtatattgaa aataaaaacta ccaactcttc agttaccgga	780
ggaaaaagaa cttctctgat atcatccctc agcactgatg ttctcatggg agcagtgccg	840
tgtctgcatg gtctcctctg ttccaggcat cagaagttga gagacaactc tcc atg	896
	Met
	1
cag gtc cac gcc ctc aga gaa gac ttt cgg gag aaa aac tca tca acc	944
Gln Val His Ala Leu Arg Glu Asp Phe Arg Glu Lys Asn Ser Ser Thr	
2 7 12 17	
aac cag cac att atc cgg ctg gag agc ctt cag gcc gag atc aag atg	992
Asn Gln His Ile Ile Arg Leu Glu Ser Leu Gln Ala Glu Ile Lys Met	
18 23 28 33	
ctg tca gat cgg aaa cgg gag ctg gag cat cgt ctc agc gct act tta	1040
Leu Ser Asp Arg Lys Arg Glu Leu Glu His Arg Leu Ser Ala Thr Leu	
34 39 44 49	
gag gaa aat gac ctg ctc caa ggg acc gtg gag gag cta cag gac cgg	1088
Glu Glu Asn Asp Leu Leu Gln Gly Thr Val Glu Glu Leu Gln Asp Arg	
50 55 60 65	
gtg cta atc ctg gag agg cag ggc cat gac aag gac cta cag ctg cac	1136
Val Leu Ile Leu Glu Arg Gln Gly His Asp Lys Asp Leu Gln Leu His	
66 71 76 81	
caa agc cag ctg gag ctt cag gag gtg cgt ctc tcc tgc cga cag ctg	1184
Gln Ser Gln Leu Glu Leu Gln Glu Val Arg Leu Ser Cys Arg Gln Leu	
82 87 92 97	
cag gtg aag gtg gaa gaa ctc act gag gag agg agt ctg cag agc tct	1232
Gln Val Lys Val Glu Glu Leu Thr Glu Glu Arg Ser Leu Gln Ser Ser	

98	103	108	113	
gcc gcc acc agc aca tcc ctc ctg tca gag atc gag cag agc atg gag				1280
Ala Ala Thr Ser Thr Ser Leu Leu Ser Glu Ile Glu Gln Ser Met Glu				
114	119	124	129	
gct gag gag ctg gag cag gag cga gag cag gtg aca ctg ctg agt gtg				1328
Ala Glu Glu Leu Glu Gln Glu Arg Glu Gln Val Thr Leu Leu Ser Val				
130	135	140	145	
gag atg act gcc cta aaa gag gag aga gac cga ctc aga gtc act tct				1376
Glu Met Thr Ala Leu Lys Glu Glu Arg Asp Arg Leu Arg Val Thr Ser				
146	151	156	161	
gag gac aag gag cca aag gag cag ctt cag aag gcc atc agg gac cgc				1424
Glu Asp Lys Glu Pro Lys Glu Gln Leu Gln Lys Ala Ile Arg Asp Arg				
162	167	172	177	
gac gag gcc att gca aag aag aat gct gtg gag ctg gaa ctt gcc aag				1472
Asp Glu Ala Ile Ala Lys Lys Asn Ala Val Glu Leu Glu Leu Ala Lys				
178	183	188	193	
tgc agg atg gat atg atg tct ctg aac agc cag ttg ctg gat gcc att				1520
Cys Arg Met Asp Met Met Ser Leu Asn Ser Gln Leu Leu Asp Ala Ile				
194	199	204	209	
cag cag aaa ctg aac ctc tgc cag cag ctg gaa gct tgg cag gat gac				1568
Gln Gln Lys Leu Asn Leu Ser Gln Gln Leu Glu Ala Trp Gln Asp Asp				
210	215	220	225	
atg cac agg gtc att gac cgg cag ctg atg gac acg cac ctg aaa gaa				1616
Met His Arg Val Ile Asp Arg Gln Leu Met Asp Thr His Leu Lys Glu				
226	231	236	241	
cgg agc cag ccg gct gct gcc ctc tgc agg ggc cac agc gct ggg cgg				1664
Arg Ser Gln Pro Ala Ala Ala Leu Cys Arg Gly His Ser Ala Gly Arg				
242	247	252	257	
ggg gat gag ccc agc atc gct gaa ggc aaa cga ctc ttc tca ttc ttc				1712
Gly Asp Glu Pro Ser Ile Ala Glu Gly Lys Arg Leu Phe Ser Phe Phe				
258	263	268	273	
agg aaa att taa gtt gggaggagtc aggccaccaa agatgggtgg actggaggca				1767
Arg Lys Ile *				
274				
gctggaaaagg cggtgcaggc aaggcctccc ctgcagcttg cacctcagca gctgccctgc				1827
ccctcatgct agggcccat gggctccggga gggcctgctc cctttcgtcg gtggggatgg				1887
agacctagag gtgggggcct gccttgacca ctgaaggctt cccttgcccc accgcctgga				1947
gaagcccagg cgtgggcttc tccaggacca cgtgcttgag caggggttagg ccacctccca				2007
gaggggcccc ttggtgttgg gctttgcagc tcacacccaa cagatcgag cccaccccca				2067
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 Val Gly Gly Ser Arg Pro Gly Gln Thr Leu Arg Gly Ser Val Gln Asn
 17 22 27 32

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 Lys Leu Asn Pro Arg Pro Gly Lys Val Val Ile Tyr Ser Glu Pro Asp
 33 38 43 48

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 Val Ser Glu Lys Cys Ile Glu Val Phe Ser Asp Ile Gln Asp Cys Ser
 49 54 59 64

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 Ser Trp Ser Leu Ser Pro Val Ile Leu Ile Lys Val Val Arg Gly Cys
 65 70 75 80

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 Trp Ile Leu Tyr Glu Gln Pro Asn Phe Glu Gly His Ser Ile Pro Leu
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Ala Pro Pro Asp Ala	Glu Leu Ser Pro Arg	Trp Ser Ser Ser Ala Ala		
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Ala Val Ala Val Gln	Gln Cys His Glu Asn	Asp Ser Pro Gln Leu Glu		
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Pro Leu Glu Ala Glu	Gly Glu Pro Phe Pro	Asp Ala Thr Thr Thr Ala		
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Glu Thr Pro Ala Arg	Ser Pro Gly Glu Asp	Ala Ser Pro Gly Ala Gly		
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His Glu Gln Glu Ala	Phe Leu Gly Val Arg	Gly Ala Pro Gly Ser Pro		
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Thr Gln Glu Arg Pro	Ala Gly Gly Leu Gly	Glu Ala Pro Asn Ala Ala		
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Pro Ser Val Cys Ala	Glu Glu Gly Ser Leu	Gly Pro Arg Asn Ala Arg		
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Ser Gln Pro Pro Lys	Gly Ala Ser Asp Leu	Pro Gly Glu Pro Pro Ala		
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Glu Gly Ala Ala His	Thr Ala Ser Ser Ala	Gln Ala Asp Cys Thr Ala		
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Arg Pro Lys Gly His	Ala His Pro Ala Lys	Val Leu Thr Leu Asp Ile		
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Tyr Leu Ser Lys Thr	Glu Gly Ala Gln Val	Asp Glu Pro Val Val Ile		
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Thr Pro Arg Ala Glu	Asp Cys Gly Asp Trp	Asp Asp Met Glu Lys Arg		
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Ser Ser Gly Arg Arg	Ser Gly Arg Arg Arg	Gly Ser Gln Lys Ser Thr		
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Lys Thr Pro Lys Asn Leu Asp Ser Leu Gly Asn Glu His Asn Pro Phe	
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Ser Gln Pro Val His Lys Gly Asn Thr Ala Thr Lys Ile Ser Leu Phe	
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Gln Arg Asn Thr Pro Ala Ser Ser Lys Thr Phe Val Gly Arg Ala Lys	
833 838 843 848	
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Leu Asn Leu Ala Lys Lys Ala Lys Glu Met Glu Gln Pro Glu Lys Lys	
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Val Met Pro Asn Ser Pro Gln Asn Gly Val Leu Val Lys Glu Thr Ala	
865 870 875 880	
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Ile Glu Thr Lys Val Thr Val Ser Glu Glu Glu Ile Leu Pro Ala Thr	
881 886 891 896	
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Arg Gly Met Asn Gly Asp Ser Ser Glu Asn Gln Ala Leu Gly Pro Gln	
897 902 907 912	
cct aac caa gat gat aaa gca gat gta caa aca gat gct ggc tgc ctt	2784
Pro Asn Gln Asp Asp Lys Ala Asp Val Gln Thr Asp Ala Gly Cys Leu	
913 918 923 928	
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Ser Glu Pro Val Ala Ser Ala Leu Ile Pro Val Lys Asp His Lys Leu	
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Lys Asp Leu Pro Pro Thr Ala Met Pro Lys Pro Gln His Thr Phe Ser	
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Asp Ser Gln Ser Pro Ala Glu Ser Ser Pro Gly Pro Ser Leu Ser Leu	
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Ser	Ala	Pro	Ala	Pro	Gly	Asp	Val	Pro	Lys	Asp	Thr	Cys	Val	Gln	Ser	
1009					1014				1019					1024		
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Pro	Ile	Ser	Ser	Phe	Pro	Cys	Thr	Asp	Leu	Lys	Val	Ser	Glu	Asn	His	
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Lys	Gly	Cys	Val	Leu	Pro	Val	Ser	Arg	Gln	Asn	Asn	Glu	Lys	Met	Pro	
1041					1046				1051					1056		
ctt	tta	gaa	ctt	gga	gga	gaa	aca	acc	cct	cct	ttg	tcc	aca	gag	cgt	3216
Leu	Leu	Glu	Leu	Gly	Gly	Glu	Thr	Thr	Pro	Pro	Leu	Ser	Thr	Glu	Arg	
1057					1062				1067					1072		
agt	cca	gaa	gct	gtg	gga	agt	gag	tgt	cca	tcc	aga	gtc	ctc	gtc	cag	3264
Ser	Pro	Glu	Ala	Val	Gly	Ser	Glu	Cys	Pro	Ser	Arg	Val	Leu	Val	Gln	
1073					1078				1083					1088		
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Val	Arg	Ser	Phe	Val	Leu	Pro	Val	Glu	Ser	Thr	Gln	Asp	Val	Ser	Ser	
1089					1094				1099					1104		
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Gln	Val	Ile	Pro	Glu	Ser	Ser	Glu	Val	Arg	Glu	Val	Gln	Leu	Pro	Thr	
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tgt	cac	agt	aat	gaa	cct	gaa	gtg	gtt	tcc	gtt	gca	agt	tgt	gct	ccc	3408
Cys	His	Ser	Asn	Glu	Pro	Glu	Val	Val	Ser	Val	Ala	Ser	Cys	Ala	Pro	
1121					1126				1131					1136		
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Pro	Gln	Glu	Glu	Val	Leu	Gly	Asn	Glu	His	Ser	His	Cys	Thr	Ala	Glu	
1137					1142				1147					1152		
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Leu	Ala	Ala	Lys	Ser	Gly	Pro	Gln	Val	Ile	Pro	Pro	Ala	Ser	Glu	Lys	
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Thr	Leu	Pro	Ile	Gln	Ala	Gln	Ser	Gln	Gly	Ser	Arg	Thr	Pro	Leu	Met	
1169					1174				1179					1184		
gct	gaa	tcc	agt	ccc	acc	aac	tct	ccc	agc	agc	gga	aat	cac	tta	gcc	3600
Ala	Glu	Ser	Ser	Pro	Thr	Asn	Ser	Pro	Ser	Ser	Gly	Asn	His	Leu	Ala	
1185					1190				1195					1200		
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Thr	Pro	Gln	Arg	Pro	Asp	Gln	Thr	Val	Thr	Asn	Gly	Gln	Asp	Ser	Pro	
1201					1206				1211					1216		
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Ala	Ser	Leu	Leu	Asn	Ile	Ser	Ala	Gly	Ser	Asp	Asp	Ser	Val	Phe	Asp	
1217					1222				1227					1232		
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Ser	Ser	Ser	Asp	Met	Glu	Lys	Phe	Thr	Glu	Ile	Ile	Lys	Gln	Met	Asp	

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Ser Ala Val Cys Met Pro Met Lys Arg Lys Lys Ala Arg Met Pro Asn				
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Ser Pro Ala Pro His Phe Ala Met Pro Pro Ile His Glu Asp His Leu				
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Glu Lys Val Phe Asp Pro Lys Val Phe Thr Phe Gly Leu Gly Lys Lys				
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Lys Glu Ser Gln Pro Glu Met Ser Pro Ala Leu His Leu Met Gln Asn				
1297	1302	1307	1312	
ctt gac aca aaa tcc aaa ctg aga ccc aaa cgt gca tct gct gaa cag				3984
Leu Asp Thr Lys Ser Lys Leu Arg Pro Lys Arg Ala Ser Ala Glu Gln				
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agc gtc ctc ttc aag tcc ctg cac acc aac act aat ggg aac agt gag				4032
Ser Val Leu Phe Lys Ser Leu His Thr Asn Thr Asn Gly Asn Ser Glu				
1329	1334	1339	1344	
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Pro Leu Val Met Pro Glu Ile Asn Asp Lys Glu Asn Arg Asp Val Thr				
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Asn Gly Gly Ile Lys Arg Ser Arg Leu Glu Lys Ser Ala Leu Phe Ser				
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Ser Leu Leu Ser Ser Leu Pro Gln Asp Lys Ile Phe Ser Pro Ser Val				
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Thr Ser Val Asn Thr Met Thr Thr Ala Phe Ser Thr Ser Gln Asn Gly				
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Ser Leu Ser Gln Ser Ser Val Ser Gln Pro Thr Thr Glu Gly Ala Pro				
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ccc tgt ggt ttg aac aaa gaa cag tca aat ctt ctg ccc gac aac tcc				4320
Pro Cys Gly Leu Asn Lys Glu Gln Ser Asn Leu Leu Pro Asp Asn Ser				
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Leu Lys Val Phe Asn Phe Asn Ser Ser Ser Thr Ser His Ser Ser Leu				
1441	1446	1451	1456	
aaa agt cca agc cac atg gaa aaa tac ccg caa aaa gag aaa acc aaa				4416
Lys Ser Pro Ser His Met Glu Lys Tyr Pro Gln Lys Glu Lys Thr Lys				
1457	1462	1467	1472	

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Glu Asp Leu Asp Ser Arg Ser Asn Leu His Leu Pro Glu Thr Lys Phe	
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Ser Glu Leu Ser Lys Leu Lys Asn Asp Asp Met Glu Lys Ala Asn His	
1489 1494 1499 1504	
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Ile Glu Ser Val Ile Lys Ser Asn Leu Pro Asn Cys Ala Asn Ser Asp	
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acc gac ttc atg ggt ctt ttc aaa tca agc cgg tat gac cca agc att	4608
Thr Asp Phe Met Gly Leu Phe Lys Ser Ser Arg Tyr Asp Pro Ser Ile	
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Ser Phe Ser Gly Met Ser Leu Ser Asp Thr Met Thr Leu Arg Gly Ser	
1537 1542 1547 1552	
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Val Gln Asn Lys Leu Asn Pro Arg Pro Gly Lys Val Val Ile Tyr Ser	
1553 1558 1563 1568	
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Glu Pro Asp Val Ser Glu Lys Cys Ile Glu Val Phe Ser Asp Ile Gln	
1569 1574 1579 1584	
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Asp Cys Ser Ser Trp Ser Leu Ser Pro Val Ile Leu Ile Lys Val Val	
1585 1590 1595 1600	
aga gga tgt tgg att ttg tat gag caa cca aat ttt gaa ggg cac tcc	4848
Arg Gly Cys Trp Ile Leu Tyr Glu Gln Pro Asn Phe Glu Gly His Ser	
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Ile Pro Leu Glu Glu Gly Glu Leu Glu Leu Ser Gly Leu Trp Gly Ile	
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Glu Asp Ile Leu Glu Arg His Glu Glu Ala Glu Ser Asp Lys Pro Val	
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Val Ile Gly Ser Ile Arg His Val Val Gln Asp Tyr Arg Val Ser His	
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Phe Asp Asp Thr Glu Glu Met Gln Gly Phe Gly Val Met Gln Lys Thr	
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Cys Ser Met Lys Val His Trp Gly Thr Trp Leu Ile Tyr Glu Glu Pro	
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Gly Phe Gln Gly Val Pro Phe Ile Leu Glu Pro Gly Glu Tyr Pro Asp	
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Gln Tyr Leu Leu Glu Glu Gly Glu Tyr Arg Asp Trp Lys Ala Trp Gly	
1825 1830 1835 1840	
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Gly Tyr Asn Gly Glu Leu Gln Ser Leu Arg Pro Ile Leu Gly Asp Phe	
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Ser Asn Ala His Met Ile Met Tyr Ser Glu Lys Asn Phe Gly Ser Lys	
1857 1862 1867 1872	
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Gly Ser Ser Ile Asp Val Leu Gly Ile Val Ala Asn Leu Lys Glu Thr	
1873 1878 1883 1888	
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Gly Tyr Gly Val Lys Thr Gln Ser Ile Asn Val Leu Ser Gly Val Trp	
1889 1894 1899 1904	
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Val Ala Tyr Glu Asn Pro Asp Phe Thr Gly Glu Gln Tyr Ile Leu Asp	
1905 1910 1915 1920	
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Lys	Gly	Phe	Tyr	Thr	Ser	Phe	Glu	Asp	Trp	Gly	Gly	Lys	Asn	Tyr	Lys	
1921					1926					1931					1936	
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Ile	Ser	Ser	Val	Gln	Pro	Ile	Cys	Leu	Asp	Ser	Phe	Thr	Gly	Pro	Arg	
1937					1942					1947					1952	
aga	cga	aat	cag	att	cac	ttg	ttt	tca	gaa	cca	cag	ttt	caa	ggc	cac	5904
Arg	Arg	Asn	Gln	Ile	His	Leu	Phe	Ser	Glu	Pro	Gln	Phe	Gln	Gly	His	
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Ser	Gln	Ser	Phe	Glu	Glu	Thr	Thr	Ser	Gln	Ile	Asp	Asp	Ser	Phe	Ser	
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Thr	Lys	Ser	Cys	Arg	Val	Ser	Gly	Gly	Ser	Trp	Val	Val	Tyr	Asp	Gly	
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Glu	Asn	Phe	Thr	Gly	Asn	Gln	Tyr	Val	Leu	Glu	Glu	Gly	His	Tyr	Pro	
2001					2006					2011					2016	
tgt	ctg	tct	gca	atg	gga	tgc	ccg	cct	gga	gca	act	ttc	aag	tct	ctt	6096
Cys	Leu	Ser	Ala	Met	Gly	Cys	Pro	Pro	Gly	Ala	Thr	Phe	Lys	Ser	Leu	
2017					2022					2027					2032	
cgt	ttt	ata	gat	gtt	gaa	ttt	tct	gaa	cca	aca	att	att	ctc	ttt	gaa	6144
Arg	Phe	Ile	Asp	Val	Glu	Phe	Ser	Glu	Pro	Thr	Ile	Ile	Leu	Phe	Glu	
2033					2038					2043					2048	
aga	gaa	gac	ttc	aaa	gga	aaa	aag	att	gaa	ctt	aat	gca	gaa	act	gtc	6192
Arg	Glu	Asp	Phe	Lys	Gly	Lys	Lys	Ile	Glu	Leu	Asn	Ala	Glu	Thr	Val	
2049					2054					2059					2064	
aat	ctc	cga	tcc	ctg	gga	ttc	aac	aca	caa	ata	cgc	tct	gtt	cag	gtt	6240
Asn	Leu	Arg	Ser	Leu	Gly	Phe	Asn	Thr	Gln	Ile	Arg	Ser	Val	Gln	Val	
2065					2070					2075					2080	
att	ggc	ggc	ata	tgg	gtt	act	tat	gaa	tat	ggc	agt	tac	aga	ggg	cga	6288
Ile	Gly	Gly	Ile	Trp	Val	Thr	Tyr	Glu	Tyr	Gly	Ser	Tyr	Arg	Gly	Arg	
2081					2086					2091					2096	
cag	ttc	cta	ttg	tca	cct	gca	gaa	gta	cct	aat	tgg	tat	gaa	ttc	agt	6336
Gln	Phe	Leu	Leu	Ser	Pro	Ala	Glu	Val	Pro	Asn	Trp	Tyr	Glu	Phe	Ser	
2097					2102					2107					2112	
ggc	tgt	cgc	caa	ata	ggc	tct	cta	cga	cct	ttt	gtt	cag	aag	cga	att	6384
Gly	Cys	Arg	Gln	Ile	Gly	Ser	Leu	Arg	Pro	Phe	Val	Gln	Lys	Arg	Ile	
2113					2118					2123					2128	
tat	ttc	aga	ctt	cga	aac	aaa	gca	aca	ggg	tta	ttc	atg	tca	acc	aat	6432
Tyr	Phe	Arg	Leu	Arg	Asn	Lys	Ala	Thr	Gly	Leu	Phe	Met	Ser	Thr	Asn	
2129					2134					2139					2144	
gga	aac	tta	gag	gat	ctg	aag	ctt	ctg	agg	ata	cag	gtc	atg	gag	gat	6480
Gly	Asn	Leu	Glu	Asp	Leu	Lys	Leu	Leu	Arg	Ile	Gln	Val	Met	Glu	Asp	

2145	2150	2155	2160	
gtc ggg gcc gat gat cag att tgg atc tat caa gaa gga tgt atc aaa				6528
Val Gly Ala Asp Asp Gln Ile Trp Ile Tyr Gln Glu Gly Cys Ile Lys				
2161	2166	2171	2176	
tgc agg ata gca gaa gac tgc tgc ctg acg att gtg ggc agc ctg gta				6576
Cys Arg Ile Ala Glu Asp Cys Cys Leu Thr Ile Val Gly Ser Leu Val				
2177	2182	2187	2192	
aca tct ggc tcc aag cta ggc ctg gcc ctg gac cag aat gct gac agc				6624
Thr Ser Gly Ser Lys Leu Gly Leu Ala Leu Asp Gln Asn Ala Asp Ser				
2193	2198	2203	2208	
cag ttc tgg agc ttg aag tcc gat ggc agg att tac agc aag ttg aag				6672
Gln Phe Trp Ser Leu Lys Ser Asp Gly Arg Ile Tyr Ser Lys Leu Lys				
2209	2214	2219	2224	
cca aat tta gtt tta gac att aaa ggg ggc aca cag tat gat caa aat				6720
Pro Asn Leu Val Leu Asp Ile Lys Gly Gly Thr Gln Tyr Asp Gln Asn				
2225	2230	2235	2240	
cac att atc ctc aac act gtc agc aaa gag aag ttt aca caa gtg tgg				6768
His Ile Ile Leu Asn Thr Val Ser Lys Glu Lys Phe Thr Gln Val Trp				
2241	2246	2251	2256	
gaa gcc atg gtc cta tat acc tga				6792
Glu Ala Met Val Leu Tyr Thr *				
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tcgaaggccc ggcgcgccat gtctctgggtg ccgcggtgcg ggcagtgaac gcgcgccggg	180
cggg atg ggc cgg cgc cgg gcg cca gag ctg tac cgg gct ccg ttc ccg	229
Met Gly Arg Arg Arg Ala Pro Glu Leu Tyr Arg Ala Pro Phe Pro	
1 5 10	
ttg tac gcg ctt cag gtc gac ccc agc act ggg ctg ctc atc gct gcg	277
Leu Tyr Ala Leu Gln Val Asp Pro Ser Thr Gly Leu Leu Ile Ala Ala	
16 21 26 31	

ggc gga gga ggc gcc gcc aag aca ggc ata aag aat ggc gtg cac ttt	325
Gly Gly Gly Gly Ala Ala Lys Thr Gly Ile Lys Asn Gly Val His Phe	
32 37 42 47	
ctg cag cta gag ctg att aat ggg cgc ttg agt gcc tcc ttg ctg cac	373
Leu Gln Leu Glu Leu Ile Asn Gly Arg Leu Ser Ala Ser Leu Leu His	
48 53 58 63	
tcc cat gac aca gag aca cgg gcc acc atg aac ttg gca ctg gct ggt	421
Ser His Asp Thr Glu Thr Arg Ala Thr Met Asn Leu Ala Leu Ala Gly	
64 69 74 79	
gac atc ctt gct gca ggg cag gat gcc cac tgt cag ctc ctg cgc ttc	469
Asp Ile Leu Ala Ala Gly Gln Asp Ala His Cys Gln Leu Leu Arg Phe	
80 85 90 95	
cag gca cat caa cag cag ggc aac aag gca gag aag gcc ggt tcc aag	517
Gln Ala His Gln Gln Gln Gly Asn Lys Ala Glu Lys Ala Gly Ser Lys	
96 101 106 111	
gag cag ggg cct cga caa agg aag gga gca gcc cca gca gag aag aaa	565
Glu Gln Gly Pro Arg Gln Arg Lys Gly Ala Ala Pro Ala Glu Lys Lys	
112 117 122 127	
tgt gga gcg gaa acc cag cac gag ggg cta gaa ctc agg gta gag aat	613
Cys Gly Ala Glu Thr Gln His Glu Gly Leu Glu Leu Arg Val Glu Asn	
128 133 138 143	
ttg cag gcg gtg cag aca gac ttt agc tcc gat cca ctg cag aaa gtt	661
Leu Gln Ala Val Gln Thr Asp Phe Ser Ser Asp Pro Leu Gln Lys Val	
144 149 154 159	
gtg tgc ttc aac cac gat aat acc ctg ctt gcc act gga gga aca gat	709
Val Cys Phe Asn His Asp Asn Thr Leu Leu Ala Thr Gly Gly Thr Asp	
160 165 170 175	
ggc tac gtc cgt gtc tgg aag gtg ccc agc ctg gag aag gtt ctg gag	757
Gly Tyr Val Arg Val Trp Lys Val Pro Ser Leu Glu Lys Val Leu Glu	
176 181 186 191	
ttc aaa gcc cac gaa ggg gag att gaa gac ctg gct tta ggg cct gat	805
Phe Lys Ala His Glu Gly Glu Ile Glu Asp Leu Ala Leu Gly Pro Asp	
192 197 202 207	
ggc aag ttg gta acc gtg ggc cgg gac ctt aag gcc tct gtg tgg cag	853
Gly Lys Leu Val Thr Val Gly Arg Asp Leu Lys Ala Ser Val Trp Gln	
208 213 218 223	
aag gat cag ctg gtg aca cag ctg cac tgg caa gaa aat gga ccc acc	901
Lys Asp Gln Leu Val Thr Gln Leu His Trp Gln Glu Asn Gly Pro Thr	
224 229 234 239	
ttt tcc agc aca cct tac cgc tac cag gcc tgc agg ttt ggg cag gtt	949
Phe Ser Ser Thr Pro Tyr Arg Tyr Gln Ala Cys Arg Phe Gly Gln Val	
240 245 250 255	

cca gac cag cct gct ggc ctg cga ctc ttc	aca gtg caa att ccc cac	997
Pro Asp Gln Pro Ala Gly Leu Arg Leu Phe	Thr Val Gln Ile Pro His	
256	261 266 271	
aag cgc ctg cgc cag ccc cct ccc tgc tac	ctc aca gcc tgg gat ggc	1045
Lys Arg Leu Arg Gln Pro Pro Pro Cys Tyr	Leu Thr Ala Trp Asp Gly	
272	277 282 287	
tcc aac ttc ttg ccc ctt cgg acc aag tcc	tgt ggc cat gaa gtc gtc	1093
Ser Asn Phe Leu Pro Leu Arg Thr Lys Ser	Cys Gly His Glu Val Val	
288	293 298 303	
tcc tgc ctc gat gtc agt gaa tcc ggc acc	ttc cta ggc ctg ggc aca	1141
Ser Cys Leu Asp Val Ser Glu Ser Gly Thr	Phe Leu Gly Leu Gly Thr	
304	309 314 319	
gtc act ggc tct gtt gcc atc tac ata gct	ttc tct ctc cag tgc ctc	1189
Val Thr Gly Ser Val Ala Ile Tyr Ile Ala	Phe Ser Leu Gln Cys Leu	
320	325 330 335	
tac tac gtg agg gag gcc cat ggc att gtg	gtg acg gat gtg gcc ttt	1237
Tyr Tyr Val Arg Glu Ala His Gly Ile Val	Val Thr Asp Val Ala Phe	
336	341 346 351	
cta cct gag aag ggt cgt ggt cca gag ctc	ctt ggg tcc cat gaa act	1285
Leu Pro Glu Lys Gly Arg Gly Pro Glu Leu	Leu Gly Ser His Glu Thr	
352	357 362 367	
gcc ctg ttc tct gtg gct gtg gac agt cgt	tgc cag ctg cat ctg ttg	1333
Ala Leu Phe Ser Val Ala Val Asp Ser Arg	Cys Gln Leu His Leu Leu	
368	373 378 383	
ccc tca cgg cgg agt gtt cct gtg tgg ctc	ctg ctc ctg ctg tgt gtc	1381
Pro Ser Arg Arg Ser Val Pro Val Trp Leu	Leu Leu Leu Leu Cys Val	
384	389 394 399	
ggg ctt att att gtg acc atc ctg ctg ctc	cag agt gcc ttt cca ggt	1429
Gly Leu Ile Ile Val Thr Ile Leu Leu Leu	Gln Ser Ala Phe Pro Gly	
400	405 410 415	
ttc ctt tag cttccct gcttcctggg aatcaggagc	ctggacactg ccatctctag	1485
Phe Leu *		
416		
agcagagtgg aggctggac tccctttgct cactccattc	gggtccacag ctgaggttgc	1545
ctctgacaag atgaatgggc actgcctgcc cttctagtga	aaaggcttgg ctatggccct	1605
gtgtgactcc aggtcccagg aaccttgccct tcgtcatctg	tggatccatc cagaacagcg	1665
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gttgagcttg tccctttatct agaaacatgt gaagatgcc	aagagcctgg aggcaactgct	1785
gtccttcctg cagaaacagt ttctcctcct cccctcagcc	ttgtggccag ttcctcttga	1845
catgaagccc ctggcatttg ctggggaagg gactggcctg	gtacttgctg ttagggcagg	1905

aaggggcaaa aggaagactt gggtagtaat ctgggggttc agatgggtag cactaagcca 1965
gctggcctaa agatgcaata agttcctagg tagtctaccc ttaccttgag gaatgggaaa 2025
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tgagaaaaaa aaaaaa 2101

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ggcggtagca ggtggtcctg cagcaggttg tctggccaca gctggggcgg cagcaggtgg 180
gctggcagta cacagactgg cagcactggg gtctgaagca gctggacaca cagcagctgg 240
gacggcagca ggtggtcctg cagcaagtgg tctggcagca gctggggctg cagcaggtgg 300
gctggcagca cacagactgg cagcactgcg gtctgcagca gctggacaca cagcagctgg 360
ggcggcagca ggtggtcctg cagcaggtgg tctggcagca gctgggacgg cagcagttct 420
tttcatatca tgggatggtg actggctcat ggttgatagt ccaatatgag gttcaacaag 480
aggatccaca gcagctgggg cggcagcaag ttgcacggca gcaggtggtc tgacagcaga 540
gtggacggca gcagctggac acaccacagc tggggcggca ggtggtctga caacagagtg 600
gacggcagca gctggacata ccacagctgg ggtggcaggt ggtctgacag cagagtgggc 660
ggcagcagct ggacacacca cagctggggc ggcaggtggt ctgacaacag actgggtggc 720
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aagagttaac catggtgtca gaggtggag gttagaagct gcggcagcag caagcggctc 960
tgacagcaggt ggtctggcag cagctgggat ggcagcagat ctcttggcag aggtcttaac 1020
cacacctctc tgaacaggag cccacccttc acccctgaca cc atg acc cac tgc 1074

Met Thr His Cys

1

tgt	tcc	cct	tgc	tgt	cag	cct	aca	tgc	tgc	agg	acc	acc	tgc	tgc	agg	1122
Cys	Ser	Pro	Cys	Cys	Gln	Pro	Thr	Cys	Cys	Arg	Thr	Thr	Cys	Cys	Arg	
5					10					15					20	
aca	acc	tgc	tgg	aag	ccc	acc	act	gtg	acc	acc	tgc	agc	agc	aca	ccc	1170
Thr	Thr	Cys	Trp	Lys	Pro	Thr	Thr	Val	Thr	Thr	Cys	Ser	Ser	Thr	Pro	
21					26					31					36	
tgt	tgc	cag	ccc	tcc	tgc	tgt	gtg	ccc	agc	tgc	tgc	cag	cct	tgc	tgc	1218
Cys	Cys	Gln	Pro	Ser	Cys	Cys	Val	Pro	Ser	Cys	Cys	Gln	Pro	Cys	Cys	
37					42					47					52	
cac	cca	act	tgc	tgt	caa	aac	acc	tgc	tgc	agg	acc	acc	tgc	tgc	cag	1266
His	Pro	Thr	Cys	Cys	Gln	Asn	Thr	Cys	Cys	Arg	Thr	Thr	Cys	Cys	Gln	
53					58					63					68	
ccc	act	tgt	gtg	gcc	agc	tgc	tgc	cag	cct	tcc	tgc	tgc	agc	aca	ccc	1314
Pro	Thr	Cys	Val	Ala	Ser	Cys	Cys	Gln	Pro	Ser	Cys	Cys	Ser	Thr	Pro	
69					74					79					84	
tgc	tgc	cag	ccc	acc	tgc	tgt	ggg	tcc	agc	tgc	tgt	ggc	caa	acc	agc	1362
Cys	Cys	Gln	Pro	Thr	Cys	Cys	Gly	Ser	Ser	Cys	Cys	Gly	Gln	Thr	Ser	
85					90					95					100	
tgt	ggg	tcc	agc	tgc	tgt	cag	cct	att	tgt	ggg	tcc	agt	tgc	tgt	cag	1410
Cys	Gly	Ser	Ser	Cys	Cys	Gln	Pro	Ile	Cys	Gly	Ser	Ser	Cys	Cys	Gln	
101					106					111					116	
cct	tgc	tgt	cac	ccg	act	tgc	tat	caa	act	atc	tgc	ttc	agg	acc	acc	1458
Pro	Cys	Cys	His	Pro	Thr	Cys	Tyr	Gln	Thr	Ile	Cys	Phe	Arg	Thr	Thr	
117					122					127					132	
tgc	tgc	cag	cct	acc	tgc	tgc	cag	ccc	acc	tgc	tgc	agg	aac	acc	tct	1506
Cys	Cys	Gln	Pro	Thr	Cys	Cys	Gln	Pro	Thr	Cys	Cys	Arg	Asn	Thr	Ser	
133					138					143					148	
tgc	cag	ccc	acc	tgc	tgt	ggg	tcc	agc	tgc	tgc	cag	cct	tgc	tgc	cac	1554
Cys	Gln	Pro	Thr	Cys	Cys	Gly	Ser	Ser	Cys	Cys	Gln	Pro	Cys	Cys	His	
149					154					159					164	
cca	aca	tgc	tgt	caa	acc	att	tgt	aga	tcc	acc	tgc	tgc	caa	cca	tcc	1602
Pro	Thr	Cys	Cys	Gln	Thr	Ile	Cys	Arg	Ser	Thr	Cys	Cys	Gln	Pro	Ser	
165					170					175					180	
tgt	gtg	acc	aga	tgc	tgc	agc	aca	ccc	tgt	tgc	cag	cca	acc	tgt	ggt	1650
Cys	Val	Thr	Arg	Cys	Cys	Ser	Thr	Pro	Cys	Cys	Gln	Pro	Thr	Cys	Gly	
181					186					191					196	
ggg	tcc	agc	tgc	tgt	agc	caa	acc	tgc	aat	gag	tcc	agc	tat	tgt	ctg	1698
Gly	Ser	Ser	Cys	Cys	Ser	Gln	Thr	Cys	Asn	Glu	Ser	Ser	Tyr	Cys	Leu	
197					202					207					212	
cct	tgc	tgc	cgt	ccc	acc	tgc	tgc	cag	acc	acc	tgc	tac	agg	acc	acc	1746
Pro	Cys	Cys	Arg	Pro	Thr	Cys	Cys	Gln	Thr	Thr	Cys	Tyr	Arg	Thr	Thr	

213	218	223	228	
tgt tgc cgc ccc agc	tgt tgc tgc agt cct	tgc tgt gtc tcc agc	tgc	1794
Cys Cys Arg Pro Ser	Cys Cys Cys Ser Pro	Cys Cys Val Ser Ser	Cys	
229	234	239	244	
tgc cag cct tcc tgc	tgc taa tc cacttgctgc	agaccaccca	cccaccagag	1847
Cys Gln Pro Ser Cys	*			
245	250			
acat				1851

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agcctcccaa aaaggtggga ttacagggtt tagccccgc gcccggcctg caaaaccctt	180
ttttactttt ggggccc aaa aagatcccc atttccccgt ctttttcgg tagactattc	240
gctactgaaa cgattttttt ttttttttga gacgaggtgg aggggcgggg gttctcgcta	300
tcttgctcaa gctgatctcg aactcctggg ttgatcaat actcagacaa tcttggcagg	360
cgcaggagga ccaaattcta gtgaatgaga tcgagtctct cggtcttttc cttccatgt	420
tttctttttg attggccctc gacgatcctc agtgacgcct ccgcaccgc ctcaccagag	480
agtcagccgc cctcgctttt ccgtgcgcac ggcagtcata ccgattggt ctgccctagc	540
ggattgacgg gcaggtagc caatggtctc gtaatatagg tggagcgagc cctcgaggat	600
gtccacgacc cggcctctcg ctgaatatc atgaggagg cgggtcgacc ccgctgcaca	660
gtccggccgg cgcatgaag tgagaagggg gctgggggtc gcgctcgcta gcgggcggcg	720
ggggtcttga agatggggtc atcggtgggc gcgcctgggt cccaagggg gcgaggggag	780
ggtgaagggg tgggacgggg gcagccgcag ggagcagcag tgatagcgag gagacactga	840
gggggccccg aggtccttga ggacctgagg gttaccgggg gcgccggggc cgtcaccctt	900
ctctgggctc gacgaccggg cactgtggag gcgggagagg ggctgagggg acgggaactg	960

accagcagc cctgccgcc aggtcaacg tggacgggct cctgggtctac ttcccgtacg 1020

actacatcta ccccgagcag ttctcctac atg cgg gag ctc aaa cgc acg ctg 1073
Met Arg Glu Leu Lys Arg Thr Leu
1 5

gac gcc aag ggt cat gga gtc ctg gag atg ccc tca ggc acc ggg aag 1121
Asp Ala Lys Gly His Gly Val Leu Glu Met Pro Ser Gly Thr Gly Lys
9 14 19 24

aca gta tcc ctg ttg gcc ctg atc atg gca tac cag aga gca tat ccg 1169
Thr Val Ser Leu Leu Ala Leu Ile Met Ala Tyr Gln Arg Ala Tyr Pro
25 30 35 40

ctg gag gtg acc aaa ctc atc tac tgc tca aga act gtg cca gag att 1217
Leu Glu Val Thr Lys Leu Ile Tyr Cys Ser Arg Thr Val Pro Glu Ile
41 46 51 56

gag aag gtg att gaa gag ctt cga aag ttg ctc aac ttc tat gag aag 1265
Glu Lys Val Ile Glu Glu Leu Arg Lys Leu Leu Asn Phe Tyr Glu Lys
57 62 67 72

cag gag ggc gag aag ctg ccg ttt ctg gga ctg gct ctg agc tcc cgc 1313
Gln Glu Gly Glu Lys Leu Pro Phe Leu Gly Leu Ala Leu Ser Ser Arg
73 78 83 88

aaa aac ttg tgt att cac cct gag gtg aca ccc ctg cgc ttt ggg aag 1361
Lys Asn Leu Cys Ile His Pro Glu Val Thr Pro Leu Arg Phe Gly Lys
89 94 99 104

gac gtc gat ggg aaa tgc cac agc ctc aca gcc tcc tat gtg cgg gcg 1409
Asp Val Asp Gly Lys Cys His Ser Leu Thr Ala Ser Tyr Val Arg Ala
105 110 115 120

cag tac cag cat gac acc agc ctg ccc cac tgc cga ttc tat gag gaa 1457
Gln Tyr Gln His Asp Thr Ser Leu Pro His Cys Arg Phe Tyr Glu Glu
121 126 131 136

ttt gat gcc cat ggg cgt gag gtg ccc ctc ccc gct ggc atc tac aac 1505
Phe Asp Ala His Gly Arg Glu Val Pro Leu Pro Ala Gly Ile Tyr Asn
137 142 147 152

ctg gat gac ctg aag gcc ctg ggg cgg cgc cag ggc tgg tgc cca tac 1553
Leu Asp Asp Leu Lys Ala Leu Gly Arg Arg Gln Gly Trp Cys Pro Tyr
153 158 163 168

ttc ctt gct cga tac tca atc ctg cat gcc aat gtg gtg gtt tat agc 1601
Phe Leu Ala Arg Tyr Ser Ile Leu His Ala Asn Val Val Val Tyr Ser
169 174 179 184

tac cac tac ctc ctg gac ccc aag att gca gac ctg gtg tcc aag gaa 1649
Tyr His Tyr Leu Leu Asp Pro Lys Ile Ala Asp Leu Val Ser Lys Glu
185 190 195 200

ctg gcc cgc aag gcc gtc gtg gtc ttc gac gag gcc cac aac att gac 1697
Leu Ala Arg Lys Ala Val Val Val Phe Asp Glu Ala His Asn Ile Asp
201 206 211 216

Lys	Arg	Gly	Lys	Leu	Pro	Arg	Trp	Ile	Gln	Glu	His	Leu	Thr	Asp	Ala	
665					670					675					680	
aac	ctc	aac	ctg	acc	gtg	gac	gag	ggc	gtc	cag	gtg	gcc	aag	tac	ttc	3137
Asn	Leu	Asn	Leu	Thr	Val	Asp	Glu	Gly	Val	Gln	Val	Ala	Lys	Tyr	Phe	
681					686					691					696	
ctg	cgg	cag	atg	gca	cag	ccc	ttc	cac	cgg	gag	gat	cag	ctg	ggc	ctg	3185
Leu	Arg	Gln	Met	Ala	Gln	Pro	Phe	His	Arg	Glu	Asp	Gln	Leu	Gly	Leu	
697					702					707					712	
tcc	ctg	ctc	agc	ctg	gag	cag	cta	gaa	tca	gag	gag	acg	ctg	aag	agg	3233
Ser	Leu	Leu	Ser	Leu	Glu	Gln	Leu	Glu	Ser	Glu	Glu	Thr	Leu	Lys	Arg	
713					718					723					728	
ata	gag	cag	att	gct	cag	cag	ctc	tga	gtggg	gcgggtgggg	ccataaacgg					3285
Ile	Glu	Gln	Ile	Ala	Gln	Gln	Leu	*								
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gaggaggaga	ggtcggagcc	gtctccagga	gcccttagag	accgagtccc	ggcggcgacg											180	
gcgggggcagc	gcaccggcag	gcggattcat	tccacttaaa	acctgaaaac	attggaccac											240	
acaaagtott	actgatttca	ggtaaaaaca	ataattgaag	atg tcc agc aaa aca												295	
				Met Ser Ser Lys Thr													
				1													
gca agc acc aac aat ata gcc cag gca agg aga act gtg cag cag tta																343	
Ala Ser Thr Asn Asn Ile Ala Gln Ala Arg Arg Thr Val Gln Gln Leu																	
6					11					16					21		
aga tta gaa gcc tcc att gaa aga ata aag gtt tcg aag gca tca gcg																391	
Arg Leu Glu Ala Ser Ile Glu Arg Ile Lys Val Ser Lys Ala Ser Ala																	
22				27					32						37		
gac ctc atg tcc tac tgt gag gaa cat gcc agg agt gac cct ttg ctg																439	
Asp Leu Met Ser Tyr Cys Glu Glu His Ala Arg Ser Asp Pro Leu Leu																	
38				43					48						53		

ata gga ata cca act tca gaa aac cct ttc aag gat aaa aaa act tgc 487
 Ile Gly Ile Pro Thr Ser Glu Asn Pro Phe Lys Asp Lys Lys Thr Cys
 54 59 64 69

atc atc tta tag tgg aatagagaaa cagctcctcg cctctttcca acaacgcaaa 542
 Ile Ile Leu *
 70

ttatgagcag ctccctgaag agatttacct tcagcttatt tggttaaccac tgctaataac 602

taaaatgttc tcagcttggga ataatggact ctgaagtctc tattttccaa gttgtccttt 662

ctcccttaaaa taccctttt 681

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<400> 336
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 Met Gly Arg
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aga aag tca aaa cga aag ccg cct ccc aag aag aag atg aca ggc acc 103
 Arg Lys Ser Lys Arg Lys Pro Pro Pro Lys Lys Lys Met Thr Gly Thr
 4 9 14 19

ctc gag acc cag ttc acc tgc ccc ttc tgc aac cac gag aaa tcc tgt 151
 Leu Glu Thr Gln Phe Thr Cys Pro Phe Cys Asn His Glu Lys Ser Cys
 20 25 30 35

gat gtg aaa atg gac cgt gcc cgc aac acc gga gtc atc tct tgt acc 199
 Asp Val Lys Met Asp Arg Ala Arg Asn Thr Gly Val Ile Ser Cys Thr
 36 41 46 51

gtg tgc cta gag gaa ttc cag acg ccc ata acg tgt atc ctt gga aac 247
 Val Cys Leu Glu Glu Phe Gln Thr Pro Ile Thr Cys Ile Leu Gly Asn
 52 57 62 67

ctg ggc ttt ttc cag agg gtg ggg agg ggg ctg gag tcc gga ccc tgc 295
 Leu Gly Phe Phe Gln Arg Val Gly Arg Gly Leu Glu Ser Gly Pro Cys
 68 73 78 83

tca tct ggc cca ctg tgt gcc ctg gtg cag ggc caa agc cgt cca gag 343
 Ser Ser Gly Pro Leu Cys Ala Leu Val Gln Gly Gln Ser Arg Pro Glu
 84 89 94 99

gaa cag gtg cca cct agt gat ttc tgt ggg gtg aga aga tgc agg gca 391

Glu Gln Val Pro Pro Ser Asp Phe Cys Gly Val Arg Arg Cys Arg Ala
100 105 110 115

ggg ttc caa tgc caa tga tcgccc ttgacctatg tggggccagat ctgtcagaac 445
Gly Phe Gln Cys Gln *

116 121

ctcgggatgt gtacagtgtat tggatagact cctgccatgc ggccaatcag taacgacaca 505

gagga 510

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<211> 459

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cagccacgaa gatcctacca aa atg aag cgc ttc ctc ttc ctc cta ctc acc 112

Met Lys Arg Phe Leu Phe Leu Leu Leu Thr
1 5

atc agc ctc ctg gtt atg gta cag ata caa act gga ctc tca gga caa 160

Ile Ser Leu Leu Val Met Val Gln Ile Gln Thr Gly Leu Ser Gly Gln
11 16 21 26

aac gac acc agc caa acc agc agc ccc tca gca tcc agc agc atg agc 208

Asn Asp Thr Ser Gln Thr Ser Ser Pro Ser Ala Ser Ser Ser Met Ser
27 32 37 42

gga ggc att ttc ctt ttc ttc gtg gcc aat gcc ata atc cac ctc ttc 256

Gly Gly Ile Phe Leu Phe Phe Val Ala Asn Ala Ile Ile His Leu Phe
43 48 53 58

tgc ttc agt tga ggg gacacgtctc agccttagcc ctgtgcccc tgaacagct 311

Cys Phe Ser *
59

gccaccatca ctgcgaagag aatccctcc atctttggga ggggttgatg ccagacatca 371

ccaggttgta gaagttgaca ggcagtgcc tgggggcaac agccaaaata ggggggtaat 431

gatgtagggg ccaagcactg cccagctg 459

<210> 338

<211> 4379

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gaagatggcg ctggccgg atg gaa atc cta atg aca gtc tcc aaa ttc gcc	171
Met Glu Ile Leu Met Thr Val Ser Lys Phe Ala	
1 5	
tcc atc tgt acc atg ggc gcc aat gct tgc gca tta gag aaa gag att	219
Ser Ile Cys Thr Met Gly Ala Asn Ala Ser Ala Leu Glu Lys Glu Ile	
12 17 22 27	
ggt cca gaa cag ttt ccg gtc aat gag cac tat ttt gga tta gtc aat	267
Gly Pro Glu Gln Phe Pro Val Asn Glu His Tyr Phe Gly Leu Val Asn	
28 33 38 43	
ttt ggg aat acc tgc tac tgc aat tca gtt ctt caa gca ctt tat ttt	315
Phe Gly Asn Thr Cys Tyr Cys Asn Ser Val Leu Gln Ala Leu Tyr Phe	
44 49 54 59	
tgt cgt cca ttt cgg gaa aaa gtt ctt gcg tat aag agt caa cct agg	363
Cys Arg Pro Phe Arg Glu Lys Val Leu Ala Tyr Lys Ser Gln Pro Arg	
60 65 70 75	
aaa aag gag agc ctt ctt aca tgc tta gca gat ctc ttc cat agc ata	411
Lys Lys Glu Ser Leu Leu Thr Cys Leu Ala Asp Leu Phe His Ser Ile	
76 81 86 91	
gcc act cag aag aaa aag gtt gga gta ata ccc cct aag aag ttc atc	459
Ala Thr Gln Lys Lys Lys Val Gly Val Ile Pro Pro Lys Lys Phe Ile	
92 97 102 107	
aca aga tta cgg aaa gaa aat gag ctt ttt gac aac tac atg caa caa	507
Thr Arg Leu Arg Lys Glu Asn Glu Leu Phe Asp Asn Tyr Met Gln Gln	
108 113 118 123	
gat gcc cat gaa ttc tta aat tac cta cta aat aca att gct gat att	555
Asp Ala His Glu Phe Leu Asn Tyr Leu Leu Asn Thr Ile Ala Asp Ile	
124 129 134 139	
tta caa gaa gag aga aag cag gaa aaa caa aat ggt cgt tta cct aat	603
Leu Gln Glu Glu Arg Lys Gln Glu Lys Gln Asn Gly Arg Leu Pro Asn	
140 145 150 155	
ggt aat att gat aat gaa aat aat aac agc aca cca gac cca acg tgg	651
Gly Asn Ile Asp Asn Glu Asn Asn Asn Ser Thr Pro Asp Pro Thr Trp	
156 161 166 171	
gtt cat gag att ttt cag gga aca tta act aat gaa acc aga tgt ctt	699

Val	His	Glu	Ile	Phe	Gln	Gly	Thr	Leu	Thr	Asn	Glu	Thr	Arg	Cys	Leu	
172					177					182					187	
act	tgt	gaa	act	ata	agc	agc	aaa	gat	gaa	gat	ttt	tta	gac	ctt	tct	747
Thr	Cys	Glu	Thr	Ile	Ser	Ser	Lys	Asp	Glu	Asp	Phe	Leu	Asp	Leu	Ser	
188					193					198					203	
gtt	gac	gtg	gaa	caa	aat	aca	tca	att	act	cac	tgc	tta	agg	ggc	ttc	795
Val	Asp	Val	Glu	Gln	Asn	Thr	Ser	Ile	Thr	His	Cys	Leu	Arg	Gly	Phe	
204					209					214					219	
agc	aac	aca	gaa	act	ctg	tgc	agt	gaa	tac	aag	tat	tac	tgt	gaa	gag	843
Ser	Asn	Thr	Glu	Thr	Leu	Cys	Ser	Glu	Tyr	Lys	Tyr	Tyr	Cys	Glu	Glu	
220					225					230					235	
tgt	cgc	agc	aaa	cag	gaa	gca	cac	aaa	cgg	atg	aaa	gtt	aaa	aaa	ctg	891
Cys	Arg	Ser	Lys	Gln	Glu	Ala	His	Lys	Arg	Met	Lys	Val	Lys	Lys	Leu	
236					241					246					251	
ccc	atg	att	cta	gct	cta	cac	ctg	aag	aga	ttt	aaa	tat	atg	gat	caa	939
Pro	Met	Ile	Leu	Ala	Leu	His	Leu	Lys	Arg	Phe	Lys	Tyr	Met	Asp	Gln	
252					257					262					267	
ctt	cat	cga	tat	aca	aaa	ctc	tct	tac	cgg	gta	gtt	ttt	cct	tta	gaa	987
Leu	His	Arg	Tyr	Thr	Lys	Leu	Ser	Tyr	Arg	Val	Val	Phe	Pro	Leu	Glu	
268					273					278					283	
ctt	cgt	ctg	ttt	aac	act	tca	ggc	gat	gcc	acc	aat	cca	gac	aga	atg	1035
Leu	Arg	Leu	Phe	Asn	Thr	Ser	Gly	Asp	Ala	Thr	Asn	Pro	Asp	Arg	Met	
284					289					294					299	
tac	gac	ctt	gtt	gct	gtt	gtg	gtt	cac	tgt	gga	agt	ggc	ccc	aat	cga	1083
Tyr	Asp	Leu	Val	Ala	Val	Val	Val	His	Cys	Gly	Ser	Gly	Pro	Asn	Arg	
300					305					310					315	
ggc	cat	tat	att	gca	ata	gtt	aag	agt	cat	gat	ttt	tgg	ttg	ttg	ttt	1131
Gly	His	Tyr	Ile	Ala	Ile	Val	Lys	Ser	His	Asp	Phe	Trp	Leu	Leu	Phe	
316					321					326					331	
gat	gac	gac	att	gta	gaa	aaa	ata	gat	gca	caa	gct	att	gaa	gaa	ttc	1179
Asp	Asp	Asp	Ile	Val	Glu	Lys	Ile	Asp	Ala	Gln	Ala	Ile	Glu	Glu	Phe	
332					337					342					347	
tac	ggg	ttg	aca	tca	gat	atc	tca	aag	aac	tct	gag	tct	ggc	tac	atc	1227
Tyr	Gly	Leu	Thr	Ser	Asp	Ile	Ser	Lys	Asn	Ser	Glu	Ser	Gly	Tyr	Ile	
348					353					358					363	
ctt	ttc	tat	cag	tct	cgg	gac	tga	gagggaaaccg	tgatgaagag	acactttctg						1281
Leu	Phe	Tyr	Gln	Ser	Arg	Asp	*									
364					369											
cctcattttct	tctctgggta	ttttggaaag	gatcaagcac	tgattttttca	agaaaagaga											1341
aatgcaggaa	gctcaggggg	cagtagcaca	ctttgcacac	gataaagcaa	agacgatgga											1401
ttgacaagcc	cttccgatca	tggtagttga	tttattttgct	caggtatcat	gctgtctgta											1461

cagttccata	caacaaggag	gtgaaatcag	agataccagc	tcctctttta	aaacagcctt	1521
ccagtcattg	gcacgcattt	tctcttttatt	aattgcacca	ataatgcttt	gaattccctg	1581
gggggtgcagt	agaaagaatc	ggaatctgtg	ccgtattgat	aaggagatga	tggtgaacac	1641
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gtaaaccaga	aatacttttg	ggcccaacac	ttgcagttgc	cttcctgatg	taaaaactaa	1761
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aataatatac	agtatatgta	tatgtaggga	gcaattgggc	aaaagtggct	ttttgtttcc	1881
ccaagggaaa	gactggcttt	gtaattataa	ttttttcctt	atttatttta	cttaaaactg	1941
gtagagtcta	agtattatat	gaagtgccca	tgattctgtc	agtaaatttg	aacatatttt	2001
tattagttaa	tgtcagttta	agttgtcctt	ttgtttgttt	ctatttttaa	ggtgaatttt	2061
aattttctatc	tgaaatcagt	taagatacct	tgagaaaaac	tgcagtgaga	ggagataaat	2121
atcctttttc	aggaggaact	gatatctctg	gctaaatatt	tgctctttta	ttatggtttc	2181
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ctgtagttgt	tggaataatt	aaaaattctg	gtgcagtggt	ggtataccaa	tctttagaat	2301
tcttaagtat	tctaattgtt	caagttgaga	tcagtcttgg	gaaaatcatg	tcatagcatt	2361
tatgttattt	tcagatgccca	ttttttaccc	tggaagaag	tcataatgtt	catcataacc	2421
ctagcagcct	ggatagtgag	ctaaacaaac	ccttcaaaga	ttaaatttta	atcaagtaga	2481
ccgggaatac	aaaagacaag	tccttccttc	ccttcccccc	acctttacaa	atcttactgg	2541
aagggtgttc	agaaattaaa	atctgtgttt	gctaagactt	cattctgttg	ggggttttta	2601
gaagtaatat	atgtaacata	aaatatatgt	aaacgattgc	agtttttttg	gacgtttttc	2661
catgcatcag	taagttgtct	gacagtagcc	aaatgtaact	tcagaaaaat	tattgaaaat	2721
tatattcaga	ataatagcaa	tcaggccttg	gatgttcttt	attaaactct	tttcaggcag	2781
taaatttaaa	aaaaattgtc	atttttctaaa	gtccttttgc	taaaactgtt	gactatggaa	2841
aacaacaaaa	aggaattttt	tagtctgtctg	ctattattaa	cattttattat	ctgtatcttt	2901
tggtctagga	aatgacttca	cctatttttt	ccataagcag	acctttaaca	gagtcactta	2961
attgggctgc	ttaaacggat	gttctgggag	aaaattataa	tatttagtat	ttgtacaaaa	3021
tatcaaaaag	tattttgaca	agttttcttt	taagatagtt	cctaaagcct	taccctggct	3081
agagggtgtt	tgtacaaatt	atatataagc	cagcctgac	taccaacatg	ccacagagaa	3141
tcacaatcaa	cagtgtgggg	aaagtcaggg	cagtggaagt	ggatgcactc	tttttatttt	3201

Met Lys Pro Asp Glu Thr Pro Met Phe Asp Pro
1 5

aat cta ctc aaa gaa gtg gac tgg agt cag aat aca gct aca ttt tct	158
Asn Leu Leu Lys Glu Val Asp Trp Ser Gln Asn Thr Ala Thr Phe Ser	
12 17 22 27	
cca gcc att tcc cca aca cat cct gga gaa ggc ttg gtt ttg agg cct	206
Pro Ala Ile Ser Pro Thr His Pro Gly Glu Gly Leu Val Leu Arg Pro	
28 33 38 43	
ctt tgt act gct gac tta aat aga ggt ttt ttt aag gta ttg ggt cag	254
Leu Cys Thr Ala Asp Leu Asn Arg Gly Phe Phe Lys Val Leu Gly Gln	
44 49 54 59	
cta aca gag act gga gtt gtc agc cct gaa caa ttt atg aaa tct ttt	302
Leu Thr Glu Thr Gly Val Val Ser Pro Glu Gln Phe Met Lys Ser Phe	
60 65 70 75	
gag cat atg aag aaa tct ggg gat tat tat gtt aca gtt gta gaa gat	350
Glu His Met Lys Lys Ser Gly Asp Tyr Tyr Val Thr Val Val Glu Asp	
76 81 86 91	
gtg act cta gga cag att gtt gct acg gca act ctg att ata gaa cat	398
Val Thr Leu Gly Gln Ile Val Ala Thr Ala Thr Leu Ile Ile Glu His	
92 97 102 107	
aaa ttc atc cat tcc tgt gct aag aga gga aga gta gaa gat gtt gtt	446
Lys Phe Ile His Ser Cys Ala Lys Arg Gly Arg Val Glu Asp Val Val	
108 113 118 123	
gct agt gat gaa tgc aga gga aag cag ctt ggc aac ttg tta tta tca	494
Ala Ser Asp Glu Cys Arg Gly Lys Gln Leu Gly Asn Leu Leu Leu Ser	
124 129 134 139	
acc ctt act ttg cta agc aag aaa ctg aac tgt tac aag att acc ctt	542
Thr Leu Thr Leu Leu Ser Lys Lys Leu Asn Cys Tyr Lys Ile Thr Leu	
140 145 150 155	
gaa tgt cta cca caa aat gtt ggt ttc tat aaa aag ttt gga tat act	590
Glu Cys Leu Pro Gln Asn Val Gly Phe Tyr Lys Lys Phe Gly Tyr Thr	
156 161 166 171	
gta tct gaa gaa aac tac atg tgt cgg agg ttt cta aag taa aaatctt	639
Val Ser Glu Glu Asn Tyr Met Cys Arg Arg Phe Leu Lys *	
172 177 182	
gtaagaaaat tgtcaaagg gctaagtcta caaggctaca ctcttcctag agttgaaata	699
ttttgttgct gcagccgagt gacctccata aatactggac tgaaaaaaca ttgtaatact	759
acaagtataa tgacatttag aagattactt tgggctgggtg ggacatgctg tgaatttaga	819
ttacaaatga atattataaaa ggggatgatt tttaaccaa ggaatatatt tttaacttga	879
atctttttctt gcattgtatt ttctctaaaag ttggtcttcc	919

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 tgcgcccttc gcagccttca ctccagccct ctgctccgcg acgcc atg aag tcg 174
 Met Lys Ser
 1
 ccg ttc tac cgc tgc cag aac acc acc tct gtg gaa aaa ggc aac tcg 222
 Pro Phe Tyr Arg Cys Gln Asn Thr Thr Ser Val Glu Lys Gly Asn Ser
 4 9 14 19
 gcg gtg atg ggc ggg gtg ctc ttc agc acc ggc ctc ctg ggc aac ctg 270
 Ala Val Met Gly Gly Val Leu Phe Ser Thr Gly Leu Leu Gly Asn Leu
 20 25 30 35
 ctg gcc ctg ggg ctg ctg gcg cgc tcg ggg ctg ggg tgg tgc tcg cgg 318
 Leu Ala Leu Gly Leu Leu Ala Arg Ser Gly Leu Gly Trp Cys Ser Arg
 36 41 46 51
 cgt cca ctg cgc ccg ctg ccc tcg gtc ttc tac atg ctg gtg tgt ggc 366
 Arg Pro Leu Arg Pro Leu Pro Ser Val Phe Tyr Met Leu Val Cys Gly
 52 57 62 67
 ctg acg gtc acc gac ttg ctg ggc aag tgc ctc cta agc ccg gtg gtg 414
 Leu Thr Val Thr Asp Leu Leu Gly Lys Cys Leu Leu Ser Pro Val Val
 68 73 78 83
 ctg gct gcc tac gct cag aac cgg agt ctg cgg gtg ctt gcg ccc gca 462
 Leu Ala Ala Tyr Ala Gln Asn Arg Ser Leu Arg Val Leu Ala Pro Ala
 84 89 94 99
 ttg gac aac tcg ttg tgc caa gcc ttc gcc ttc ttc atg tcc ttc ttt 510
 Leu Asp Asn Ser Leu Cys Gln Ala Phe Ala Phe Phe Met Ser Phe Phe
 100 105 110 115
 ggg ctc tcc tcg aca ctg caa ctc ctg gcc atg gca ctg gag tgc tgg 558
 Gly Leu Ser Ser Thr Leu Gln Leu Leu Ala Met Ala Leu Glu Cys Trp
 116 121 126 131
 ctc tcc cta ggg cac cct ttc ttc tac cga cgg cac atc acc ctg cgc 606
 Leu Ser Leu Gly His Pro Phe Phe Tyr Arg Arg His Ile Thr Leu Arg
 132 137 142 147

ctg ggc gca ctg gtg gcc cgg gtg gtg agc gcc ttc tcc ctg gct ttc	654
Leu Gly Ala Leu Val Ala Pro Val Val Ser Ala Phe Ser Leu Ala Phe	
148 153 158 163	
tgc gcg cta cct ttc atg ggc ttc ggg aag ttc gtg cag tac tgc ccc	702
Cys Ala Leu Pro Phe Met Gly Phe Gly Lys Phe Val Gln Tyr Cys Pro	
164 169 174 179	
ggc acc tgg tgc ttt atc cag atg gtc cac gag gag ggc tgc ctg tgc	750
Gly Thr Trp Cys Phe Ile Gln Met Val His Glu Glu Gly Ser Leu Ser	
180 185 190 195	
gtg ctg ggg tac tct gtg ctc tac tcc agc ctc atg gcg ctg ctg gtc	798
Val Leu Gly Tyr Ser Val Leu Tyr Ser Ser Leu Met Ala Leu Leu Val	
196 201 206 211	
ctc gcc acc gtg ctg tgc aac ctc ggc gcc atg cgc aac ctc tat gcg	846
Leu Ala Thr Val Leu Cys Asn Leu Gly Ala Met Arg Asn Leu Tyr Ala	
212 217 222 227	
atg cac cgg cgg ctg cag cgg cac ccg cgc tcc tgc acc agg gac tgt	894
Met His Arg Arg Leu Gln Arg His Pro Arg Ser Cys Thr Arg Asp Cys	
228 233 238 243	
gcc gag ccg cgc gcg gac ggg agg gaa gcg tcc cct cag ccc ctg gag	942
Ala Glu Pro Arg Ala Asp Gly Arg Glu Ala Ser Pro Gln Pro Leu Glu	
244 249 254 259	
gag ctg gat cac ctc ctg ctg ctg gcg ctg atg acc gtg ctc ttc act	990
Glu Leu Asp His Leu Leu Leu Leu Ala Leu Met Thr Val Leu Phe Thr	
260 265 270 275	
atg tgt tct ctg ccc gta att tat cgc gct tac tat gga gca ttt aag	1038
Met Cys Ser Leu Pro Val Ile Tyr Arg Ala Tyr Tyr Gly Ala Phe Lys	
276 281 286 291	
gat gtc aag gag aaa aac agg acc tct gaa gaa gca gaa gac ctc cga	1086
Asp Val Lys Glu Lys Asn Arg Thr Ser Glu Glu Ala Glu Asp Leu Arg	
292 297 302 307	
gcc ttg cga ttt cta tct gtg att tca att gtg gac cct tgg att ttt	1134
Ala Leu Arg Phe Leu Ser Val Ile Ser Ile Val Asp Pro Trp Ile Phe	
308 313 318 323	
atc att ttc aga tct cca gta ttt cgg ata ttt ttt cac aag att ttc	1182
Ile Ile Phe Arg Ser Pro Val Phe Arg Ile Phe Phe His Lys Ile Phe	
324 329 334 339	
att aga cct ctt agg tac agg agc cgg tgc agc aat tcc act aac atg	1230
Ile Arg Pro Leu Arg Tyr Arg Ser Arg Cys Ser Asn Ser Thr Asn Met	
340 345 350 355	
gaa tcc agt ctg tga cagtgttttt cactctgtgg taagctgagg aatatgtcac	1285
Glu Ser Ser Leu *	
356	
attttcagcg gcaccagc	1303

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 atg ttt ctt acc cgg tct gag tac gac agg ggc gtg aat act ttt tct 168
 Met Phe Leu Thr Arg Ser Glu Tyr Asp Arg Gly Val Asn Thr Phe Ser
 1 5 10 15
 ccc gaa gga aga tta ttt caa gtg gaa tat gcc att gag gct atc aag 216
 Pro Glu Gly Arg Leu Phe Gln Val Glu Tyr Ala Ile Glu Ala Ile Lys
 17 22 27 32
 ctt ggt tct aca gcc att ggg atc cag aca tca gag ggt gtg tgc cta 264
 Leu Gly Ser Thr Ala Ile Gly Ile Gln Thr Ser Glu Gly Val Cys Leu
 33 38 43 48
 gct gtg gag aag aga att act tcc cca ctg atg gag ccc agc agc att 312
 Ala Val Glu Lys Arg Ile Thr Ser Pro Leu Met Glu Pro Ser Ser Ile
 49 54 59 64
 gag aaa att gta gag att gat gct cac ata ggt tgt gcc atg agt ggg 360
 Glu Lys Ile Val Glu Ile Asp Ala His Ile Gly Cys Ala Met Ser Gly
 65 70 75 80
 cta att gct gat gct aag act tta att gat aaa gcc aga gtg gag aca 408
 Leu Ile Ala Asp Ala Lys Thr Leu Ile Asp Lys Ala Arg Val Glu Thr
 81 86 91 96
 cag aac cac tgg ttc acc tac aat gag aca atg aca gtg gag agt gtg 456
 Gln Asn His Trp Phe Thr Tyr Asn Glu Thr Met Thr Val Glu Ser Val
 97 102 107 112
 acc caa gct gtg tcc aat ctg gct ttg cag ttt gga gaa gaa gat gca 504
 Thr Gln Ala Val Ser Asn Leu Ala Leu Gln Phe Gly Glu Glu Asp Ala
 113 118 123 128
 gat cca ggt gcc atg tct cgt ccc ttt gga gta gca tta tta ttt gga 552
 Asp Pro Gly Ala Met Ser Arg Pro Phe Gly Val Ala Leu Leu Phe Gly
 129 134 139 144
 gga gtt gat gag aaa gga ccc cag ctg ttt cat atg gac cca tct ggg 600
 Gly Val Asp Glu Lys Gly Pro Gln Leu Phe His Met Asp Pro Ser Gly
 145 150 155 160

acc ttt gta cag tgt gat gct cga gca att ggc tct gct tca gag ggt 648
 Thr Phe Val Gln Cys Asp Ala Arg Ala Ile Gly Ser Ala Ser Glu Gly
 161 166 171 176

gcc cag agc tcc ttg caa gaa gtt tac cac aag tct atg act ttg aaa 696
 Ala Gln Ser Ser Leu Gln Glu Val Tyr His Lys Ser Met Thr Leu Lys
 177 182 187 192

gaa gcc atc aag tct tca ctc atc atc ctc aaa caa gta atg gag gag 744
 Glu Ala Ile Lys Ser Ser Leu Ile Ile Leu Lys Gln Val Met Glu Glu
 193 198 203 208

aag ctg aat gca aca aac att gag cta gcc aca gtg cag cct ggc cag 792
 Lys Leu Asn Ala Thr Asn Ile Glu Leu Ala Thr Val Gln Pro Gly Gln
 209 214 219 224

aat ttc cac atg ttc aca aag gaa gaa ctt gaa gag gtt atc aag gac 840
 Asn Phe His Met Phe Thr Lys Glu Glu Leu Glu Glu Val Ile Lys Asp
 225 230 235 240

att taa ggaatcctga tcctcagaac ttctctggga caatttcagt tctaataatg 896
 Ile *
 241

tccttaaatt ttatttccag ctctgttcc ttggaaaatc tccattgtat gtgcattttt 956

taaatgatgt ctgtacataa aggcagttct gaaataaaga aaattttaaa atattaaaaa 1016

aaaaaaa 1023

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 <213> Homo sapiens

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 atg ctc ggc agg tct ggg tac cgg gcg ctg ccc ctg ggt gat ttt gac 106
 Met Leu Gly Arg Ser Gly Tyr Arg Ala Leu Pro Leu Gly Asp Phe Asp
 1 5 10 15

cgc ttc cag cag tcg agc ttc ggc ttt ctg ggc tcg cag aag ggc tgc 154
 Arg Phe Gln Gln Ser Ser Phe Gly Phe Leu Gly Ser Gln Lys Gly Cys
 17 22 27 32

ttg tcc ccg gag cgg ggc ggc gtg ggg aca ggg gcc gat gta ccc cag 202
 Leu Ser Pro Glu Arg Gly Gly Val Gly Thr Gly Ala Asp Val Pro Gln
 33 38 43 48

agc tgg ccc tcc tgc ctc tgt cat ggc ctc atc agt ttc ctg ggg ttc	250
Ser Trp Pro Ser Cys Leu Cys His Gly Leu Ile Ser Phe Leu Gly Phe	
49 54 59 64	
ttg ctg ctg ttg gtc acc ttc ccc att tct ggc tgg ttt gcc ctg aag	298
Leu Leu Leu Leu Val Thr Phe Pro Ile Ser Gly Trp Phe Ala Leu Lys	
65 70 75 80	
att gtg ccc acc tac gag cgg atg att gtg ttc cgc ctg ggc cgg atc	346
Ile Val Pro Thr Tyr Glu Arg Met Ile Val Phe Arg Leu Gly Arg Ile	
81 86 91 96	
cgc acc ccc cag gga cct ggc atg gtt ctg ctc ttg ccc ttc att gac	394
Arg Thr Pro Gln Gly Pro Gly Met Val Leu Leu Leu Pro Phe Ile Asp	
97 102 107 112	
tcc ttt cag agg gtg gat ctg agg aca cga gcc ttc aac gtc cct ccc	442
Ser Phe Gln Arg Val Asp Leu Arg Thr Arg Ala Phe Asn Val Pro Pro	
113 118 123 128	
tgc aag ctg gcc tct aag gac ggg gct gtg ctg tcc gtg gga gcc gat	490
Cys Lys Leu Ala Ser Lys Asp Gly Ala Val Leu Ser Val Gly Ala Asp	
129 134 139 144	
gtc cag ttt cgc atc tgg gac ccg gtg ctg tcc gtg atg act gtg aaa	538
Val Gln Phe Arg Ile Trp Asp Pro Val Leu Ser Val Met Thr Val Lys	
145 150 155 160	
gac ctg aac aca gcc aca cgc atg aca gcc cag aac gcc atg acc aag	586
Asp Leu Asn Thr Ala Thr Arg Met Thr Ala Gln Asn Ala Met Thr Lys	
161 166 171 176	
gcc ctg ctc aag agg ccg ctg cgg gag atc cag atg gag aag ctc aag	634
Ala Leu Leu Lys Arg Pro Leu Arg Glu Ile Gln Met Glu Lys Leu Lys	
177 182 187 192	
atc agc gac cag ctt ctg ctg gag atc aac gat gtg acc agg gcc tgg	682
Ile Ser Asp Gln Leu Leu Leu Glu Ile Asn Asp Val Thr Arg Ala Trp	
193 198 203 208	
ggg ctg gag gta gac cgc gtg gag ctg gca gtg gag gcc gtg ctc cag	730
Gly Leu Glu Val Asp Arg Val Glu Leu Ala Val Glu Ala Val Leu Gln	
209 214 219 224	
ccg ccc cag gac agc cca gct ggg ccc aac ctg gac agc acc ctc cag	778
Pro Pro Gln Asp Ser Pro Ala Gly Pro Asn Leu Asp Ser Thr Leu Gln	
225 230 235 240	
cag ctg gcc ctg cac ttc ctg gga gga agc atg aac tca atg gca gga	826
Gln Leu Ala Leu His Phe Leu Gly Gly Ser Met Asn Ser Met Ala Gly	
241 246 251 256	
ggg gcc ccg tcc ccg ggg cca gca gac acc gtg gag atg gtg agt gaa	874
Gly Ala Pro Ser Pro Gly Pro Ala Asp Thr Val Glu Met Val Ser Glu	
257 262 267 272	
gtt gag cca cct gcc cct caa gtt ggt gcc agg tcc agt ccg aag cag	922

Val	Glu	Pro	Pro	Ala	Pro	Gln	Val	Gly	Ala	Arg	Ser	Ser	Pro	Lys	Gln	
273					278					283					288	
cct	ctg	gcg	gag	ggg	cta	ctg	act	gct	cta	cag	ccc	ttc	ctg	tct	gag	970
Pro	Leu	Ala	Glu	Gly	Leu	Leu	Thr	Ala	Leu	Gln	Pro	Phe	Leu	Ser	Glu	
289					294					299					304	
gcc	ctg	gtc	agc	caa	gtc	ggg	gcc	tgc	tac	cag	ttc	aat	gtc	gtc	ctg	1018
Ala	Leu	Val	Ser	Gln	Val	Gly	Ala	Cys	Tyr	Gln	Phe	Asn	Val	Val	Leu	
305					310					315					320	
ccc	agc	ggc	acc	caa	agc	gcc	tac	ttc	ctg	gac	ctc	act	aca	gga	cga	1066
Pro	Ser	Gly	Thr	Gln	Ser	Ala	Tyr	Phe	Leu	Asp	Leu	Thr	Thr	Gly	Arg	
321					326					331					336	
gga	aga	gtg	gga	cac	ggg	gtg	cct	gat	ggc	atc	cct	gat	gtg	gtg	gtg	1114
Gly	Arg	Val	Gly	His	Gly	Val	Pro	Asp	Gly	Ile	Pro	Asp	Val	Val	Val	
337					342					347					352	
gag	atg	gcc	gag	gca	gac	ctg	cgg	gcc	ctg	cta	tgc	aga	gag	ctg	cgg	1162
Glu	Met	Ala	Glu	Ala	Asp	Leu	Arg	Ala	Leu	Leu	Cys	Arg	Glu	Leu	Arg	
353					358					363					368	
ccc	ctg	ggg	gcc	tac	atg	agt	gga	cgg	ctg	aag	gtg	aag	ggc	gac	ctg	1210
Pro	Leu	Gly	Ala	Tyr	Met	Ser	Gly	Arg	Leu	Lys	Val	Lys	Gly	Asp	Leu	
369					374					379					384	
gct	atg	gcc	atg	aag	ctg	gag	gct	gtc	ctc	agg	gcc	ttg	aag	tag	cag	1258
Ala	Met	Ala	Met	Lys	Leu	Glu	Ala	Val	Leu	Arg	Ala	Leu	Lys	*		
385					390					395						
ccttggtga	ctttccagag	cccagtccea	agcctggcac	caagcctgag	gggcctcttg											1318
gaggaggagg	tgttcatctg	caccacagag	agttgaggcc	ctaacaaatt	tcaggcccag											1378
ccaagagccc	atgaatggag	gctgcaggag	gctgagtcg	gctgccatgc	acgtctcccc											1438
tacagtgggt	ctctggacaa	ggctttgtcc	atcccgggtcc	ccagctgagt	gccagcgct											1498
gagctgggtg	cacggtgtga	ttccaggagg	agagccaggc	ctgccctgcc	ctgctggctt											1558
cctgactgga	gagacaggac	ccacagaaac	agcctgacag	cagctgggtt	ggccttctgtg											1618
tgagggacca	agcatgtggc	ccaggctcta	agctctgcgg	ggattggaga	gggatgggga											1678
gggaaggga	ggcagctcca	agaagaggtc	cctgtggcga	agttacctgg	ggatcctggc											1738
tgccccacct	tcctggctgc	agtccaggcc	cgtgctggcg	ggattgggca	tggaaggag											1798
cagggcctgc	tgttccctg	gcgctgctcc	caaagatttc	tgactcatct	gccagctccg											1858
tcctgcatgc	ctggcgagct	ggggcccagg	gcagcatgaa	ggagagccct	gcgttctgtg											1918
cttcttacca	gaggtttgca	agcctcagac	aaataaatgt	ggtgtttaca	atgtaaaaaa											1978
aagacttcag	tcattcccage	aatcgcttgg	ttcagtttca	ttcagctctc	tatggaccag											2038

taatctgata aataaccgag ctcttcttttgg gggatcacta cttcttgact tgtagtaact 2098
gccaccaatc aagcagtcctc tcccctgcaa aaca 2132

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<220>
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<222> (134)..(499)

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tacgtaagct tggatcctct agagcggcgc cctactacta cttaaattcgc ggcggcgacg 120
tggtgaaata gat atg gcg acc gag ggg gat gtg gag ctg gag ttg gag 169
Met Ala Thr Glu Gly Asp Val Glu Leu Glu Leu Glu
1 5 10
act gag acc agt gga cca gag cgg cct ccg gag aag cca cgg aaa cat 217
Thr Glu Thr Ser Gly Pro Glu Arg Pro Pro Glu Lys Pro Arg Lys His
13 18 23 28
gac agc ggt gcg gcg gac ttg gag cgg gtc acc gac tat gca gag gag 265
Asp Ser Gly Ala Ala Asp Leu Glu Arg Val Thr Asp Tyr Ala Glu Glu
29 34 39 44
aag gag atc cag agt tcc aat ctg gag acg gcc atg tct gtg att gga 313
Lys Glu Ile Gln Ser Ser Asn Leu Glu Thr Ala Met Ser Val Ile Gly
45 50 55 60
gac aga agg tcc cgg gag cag aaa gcc aaa cag gag cgg gag aaa gaa 361
Asp Arg Arg Ser Arg Glu Gln Lys Ala Lys Gln Glu Arg Glu Lys Glu
61 66 71 76
ctg gca aaa gtc act atc aag aag gaa gat ctg gag cta ata atg act 409
Leu Ala Lys Val Thr Ile Lys Lys Glu Asp Leu Glu Leu Ile Met Thr
77 82 87 92
gag atg gag ata tct cga gca gca gca gaa cgc agt ttg cgg gaa cac 457
Glu Met Glu Ile Ser Arg Ala Ala Ala Glu Arg Ser Leu Arg Glu His
93 98 103 108
atg ggc aac gtg gta gag gcg ctt att gcc cta acc aac tga tgcgtgc 506
Met Gly Asn Val Val Glu Ala Leu Ile Ala Leu Thr Asn *
109 114 119
tttctcaaat atacctactg gattaattta tggcaataaa attttttttt gtctttttaaa 566
aaaaaaaaa 575

<210> 344
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 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (52)..(471)

<400> 344
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 Met Glu
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gcg gtg gtg ttc gtc ttc tct ctc ctc gat tgt tgc gcg ctc atc ttc 105
 Ala Val Val Phe Val Phe Ser Leu Leu Asp Cys Cys Ala Leu Ile Phe
 3 8 13 18

ctc tcg gtc tac ttc ata att aca ttg tct gat tta gaa tgt gat tac 153
 Leu Ser Val Tyr Phe Ile Ile Thr Leu Ser Asp Leu Glu Cys Asp Tyr
 19 24 29 34

att aat gct aga tca tgt tgc tca aaa tta aac aag tgg gta att cca 201
 Ile Asn Ala Arg Ser Cys Cys Ser Lys Leu Asn Lys Trp Val Ile Pro
 35 40 45 50

gaa ttg att ggc cat acc att gtc act gta tta ctg ctc atg tca ttg 249
 Glu Leu Ile Gly His Thr Ile Val Thr Val Leu Leu Leu Met Ser Leu
 51 56 61 66

cac tgg ttc atc ttc ctt ctc aac tta cct gtt gcc act tgg aat ata 297
 His Trp Phe Ile Phe Leu Leu Asn Leu Pro Val Ala Thr Trp Asn Ile
 67 72 77 82

tat cga tac att atg gtg ccg agt ggt aac atg gga gtg ttt gat cca 345
 Tyr Arg Tyr Ile Met Val Pro Ser Gly Asn Met Gly Val Phe Asp Pro
 83 88 93 98

aca gaa ata cac aat cga ggg cag ctg aag tca cac atg aaa gaa gcc 393
 Thr Glu Ile His Asn Arg Gly Gln Leu Lys Ser His Met Lys Glu Ala
 99 104 109 114

atg atc aag ctt ggt ttc cac ttg ctc tgc ttc ttc atg tat ctt tat 441
 Met Ile Lys Leu Gly Phe His Leu Leu Cys Phe Phe Met Tyr Leu Tyr
 115 120 125 130

agt atg atc tta gct ttg ata aat gac tga a gccgtgggtg aagtcagcct 492
 Ser Met Ile Leu Ala Leu Ile Asn Asp *
 131 136

acactacagt gcacagttga ggagccagag atttcttaaa tcatocttag aaccgtgacc 552

atagcagtat atattttcct cttggaacaa aaaactatatt ttgctgtatt tttaccatat 612

aaagtatttta aaaaacataa aaaaaaaaaa

642

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<212> DNA
<213> Homo sapiens

<220>
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<222> (489) .. (2900)

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ccgcaatgct ttttttaggtg tttttttttg gggctgggggt gtgttttattt gggatatatac 120
aatgagtcac ggattaaaat tgcttcacgc ggatagatac ctagggtgttc cacagcatta 180
ctgaacaagc tgtogtcatt tccccattac ctcagaagac ccccttaatt acttacttat 240
attaactgta gaacgtattt atgcatacca ggctctacct ctgggctttc tattctgttc 300
cagagaccca gtaccagaat atttaaatac ctggggggcgt taaatacggt ttaatatctg 360
atagggccag tttctgcgca ttgcacattt ttttttcccc tttcaggaac gtgttcaggc 420
ccgcggcagg gggcgggacg gcgcctctct ctcgggtctg gttccagccg agcctctcgg 480
acgcagag atg gaa atc ccg aag ctg ctc ccg gct cgc ggg aca cta cag 530
Met Glu Ile Pro Lys Leu Leu Pro Ala Arg Gly Thr Leu Gln
1 5 10
ggc ggc ggc ggc ggc ggt atc ccc gcg ggt ggc ggc cga gtc cac cga 578
Gly Gly Gly Gly Gly Gly Ile Pro Ala Gly Gly Gly Arg Val His Arg
15 20 25 30
ggc cct gac tcg ccg gct ggc cag gtc ccc acg cgc cgc ctc ctg ctg 626
Gly Pro Asp Ser Pro Ala Gly Gln Val Pro Thr Arg Arg Leu Leu Leu
31 36 41 46
ctc cgg ggc ccc caa gat ggc ggg ccc ggg cgg cgg cgc gag gag gcc 674
Leu Arg Gly Pro Gln Asp Gly Gly Pro Gly Arg Arg Arg Glu Glu Ala
47 52 57 62
agc acg gca tca cgg ggc cct ggc cca agc ctg ttg gcg ccg agg acc 722
Ser Thr Ala Ser Arg Gly Pro Gly Pro Ser Leu Leu Ala Pro Arg Thr
63 68 73 78
gat caa cct agc ggc ggc ggc ggc ggc ggc gac gac ttc ttc ctg 770
Asp Gln Pro Ser Gly Gly Gly Gly Gly Gly Gly Asp Asp Phe Phe Leu
79 84 89 94
gtg ctg ctt gac ccg gtg ggt ggc gac gtg gag acc gcg ggc tcc ggt 818
Val Leu Leu Asp Pro Val Gly Gly Asp Val Glu Thr Ala Gly Ser Gly

95	100	105	110	
cag gcc gca ggg cct	gtg ttg agg gag	gag gcc gag gag ggc	ccg ggg	866
Gln Ala Ala Gly Pro	Val Leu Arg Glu	Glu Ala Glu Glu Gly Pro	Gly	
111	116	121	126	
ctc cag ggg ggc gag	agc ggc gcg aat	ccc gcg ggg ccc act	gcg cta	914
Leu Gln Gly Gly Glu	Ser Gly Ala Asn Pro	Ala Gly Pro Thr Ala	Leu	
127	132	137	142	
ggc ccc cgc tgc ctg	tcc gcg gtt ccc act	ccg gcc ccg atc tcc	gcc	962
Gly Pro Arg Cys Leu	Ser Ala Val Pro Thr	Pro Ala Pro Ile Ser	Ala	
143	148	153	158	
ccc ggc ccc gcc gcg	gcc ttc gcg ggc aca	gtc act atc cac aac	cag	1010
Pro Gly Pro Ala Ala	Ala Phe Ala Gly Thr	Val Thr Ile His Asn	Gln	
159	164	169	174	
gac ctg ctg ttg cgc	ttt gag aac ggc gtc	ctc acc ctg gcc acg	ccc	1058
Asp Leu Leu Leu Arg	Phe Glu Asn Gly Val	Leu Thr Leu Ala Thr	Pro	
175	180	185	190	
cca cca cac gcc tgg	gag cca ggg gcc gct	cct gcc cag cag ccc	ggg	1106
Pro Pro His Ala Trp	Glu Pro Gly Ala Ala	Pro Ala Gln Gln Pro	Gly	
191	196	201	206	
tgt ctg atc gcc ccg	caa gct ggg ttc ccg	cat gcc gcg cac ccg	ggt	1154
Cys Leu Ile Ala Pro	Gln Ala Gly Phe Pro	His Ala Ala His Pro	Gly	
207	212	217	222	
gac tgc cca gag ctg	ccg cca gac ctc ctg	cta gct gag ccg gcc	gaa	1202
Asp Cys Pro Glu Leu	Pro Pro Asp Leu Leu	Leu Ala Glu Pro Ala	Glu	
223	228	233	238	
ccc gcg cca gct ccg	gcg cct gag gag gag	gcg gag ggc ccg gcc	gcc	1250
Pro Ala Pro Ala Pro	Ala Pro Glu Glu Glu	Ala Glu Gly Pro Ala	Ala	
239	244	249	254	
gcc ctg ggc ccc cgc	gga ccg ctg ggc tcc	ggc cca ggc gtg gtg	ctg	1298
Ala Leu Gly Pro Arg	Gly Pro Leu Gly Ser	Gly Pro Gly Val Val	Leu	
255	260	265	270	
tac ttg tgc ccc gag	gcg cag tgc ggg caa	acc ttc gcc aag aag	cac	1346
Tyr Leu Cys Pro Glu	Ala Gln Cys Gly Gln	Thr Phe Ala Lys Lys	His	
271	276	281	286	
cag ctg aag gtg cac	ctg ctg acg cac agc	agc agc agc cag ggc	cag	1394
Gln Leu Lys Val His	Leu Leu Thr His Ser	Ser Ser Ser Gln Gly	Gln	
287	292	297	302	
ccc ttc aaa tgc ccc	ctg ggt ggc tgc ggc	tgg acc ttc acc acc	tct	1442
Pro Phe Lys Cys Pro	Leu Gly Gly Cys Gly	Trp Thr Phe Thr Thr	Ser	
303	308	313	318	
tac aag ctc aag agg	cac ctg cag tgc cac	gac aaa ctg cgg ccc	ttt	1490
Tyr Lys Leu Lys Arg	His Leu Gln Ser His	Asp Lys Leu Arg Pro	Phe	
319	324	329	334	

ggc tgc ccg gca gag ggc tgt ggc aag agc ttc acc aca gtg tac aac	1538
Gly Cys Pro Ala Glu Gly Cys Gly Lys Ser Phe Thr Thr Val Tyr Asn	
335 340 345 350	
ctc aag gcg cac atg aag ggc cat gag cag gag aac tca ttc aaa tgc	1586
Leu Lys Ala His Met Lys Gly His Glu Gln Glu Asn Ser Phe Lys Cys	
351 356 361 366	
gag gtg tgc gag gag agc ttc ccc acg cag gcc aaa ctc agc gcc cac	1634
Glu Val Cys Glu Glu Ser Phe Pro Thr Gln Ala Lys Leu Ser Ala His	
367 372 377 382	
cag cgc agc cac ttc gaa ccg gag agg cct tac cag tgc gcg ttt tct	1682
Gln Arg Ser His Phe Glu Pro Glu Arg Pro Tyr Gln Cys Ala Phe Ser	
383 388 393 398	
ggc tgc aag aag aca ttt atc aca gtg agt gct ctg ttt tcc cat aac	1730
Gly Cys Lys Lys Thr Phe Ile Thr Val Ser Ala Leu Phe Ser His Asn	
399 404 409 414	
cgc gcc cat ttc agg gaa cag gaa ctg ttt tcc tgc tct ttt cct ggc	1778
Arg Ala His Phe Arg Glu Gln Glu Leu Phe Ser Cys Ser Phe Pro Gly	
415 420 425 430	
tgc agc aaa caa tat gac aag gct tgt agg ctg aaa att cac ctg cgg	1826
Cys Ser Lys Gln Tyr Asp Lys Ala Cys Arg Leu Lys Ile His Leu Arg	
431 436 441 446	
agt cac acc ggc gag aga cct ttc ctt tgt gac ttt gat ggc tgt ggc	1874
Ser His Thr Gly Glu Arg Pro Phe Leu Cys Asp Phe Asp Gly Cys Gly	
447 452 457 462	
tgg aac ttc act agc atg tcc aaa ctc tta agg cac aaa aga aag cac	1922
Trp Asn Phe Thr Ser Met Ser Lys Leu Leu Arg His Lys Arg Lys His	
463 468 473 478	
gac gat gac cgg agg ttc atg tgc cct gtg gaa ggc tgt ggg aaa tct	1970
Asp Asp Asp Arg Arg Phe Met Cys Pro Val Glu Gly Cys Gly Lys Ser	
479 484 489 494	
ttc acg agg gcg gaa cat ctg aaa ggc cac agc ata acc cac ctg ggc	2018
Phe Thr Arg Ala Glu His Leu Lys Gly His Ser Ile Thr His Leu Gly	
495 500 505 510	
aca aag cct ttc gtg tgt cct gtg gca ggc tgc tgt gcc agg ttc tct	2066
Thr Lys Pro Phe Val Cys Pro Val Ala Gly Cys Cys Ala Arg Phe Ser	
511 516 521 526	
gct cgc agt agc ctc tac att cac tcc aag aaa cac ctg cag gat gtg	2114
Ala Arg Ser Ser Leu Tyr Ile His Ser Lys Lys His Leu Gln Asp Val	
527 532 537 542	
gac act tgg aaa agc cgt tgc ccg atc tcc tct tgt aat aaa ctc ttc	2162
Asp Thr Trp Lys Ser Arg Cys Pro Ile Ser Ser Cys Asn Lys Leu Phe	
543 548 553 558	

aca tcc aag cac agc atg aag acg cac atg gtt aaa agg cat aag gtg	2210
Thr Ser Lys His Ser Met Lys Thr His Met Val Lys Arg His Lys Val	
559 564 569 574	
ggc cag gat ctc tta gct cag cta gaa gca gca aat tct ctc aca ccc	2258
Gly Gln Asp Leu Leu Ala Gln Leu Glu Ala Ala Asn Ser Leu Thr Pro	
575 580 585 590	
agc agt gaa ctt acc agc cag aga cag aat gat ctc agt gat gca gag	2306
Ser Ser Glu Leu Thr Ser Gln Arg Gln Asn Asp Leu Ser Asp Ala Glu	
591 596 601 606	
ata gtg tct ctc ttc tct gat gta cct gac agt act tct gct gca ttg	2354
Ile Val Ser Leu Phe Ser Asp Val Pro Asp Ser Thr Ser Ala Ala Leu	
607 612 617 622	
ctg gac aca gca ttg gtg aac tct gga atc ttg act att gat gtg gct	2402
Leu Asp Thr Ala Leu Val Asn Ser Gly Ile Leu Thr Ile Asp Val Ala	
623 628 633 638	
tct gtg agc tcg act ctg gca ggg cac ctc cct gct aat aat aat aat	2450
Ser Val Ser Ser Thr Leu Ala Gly His Leu Pro Ala Asn Asn Asn Asn	
639 644 649 654	
tcc gta ggg cag gct gtg gac cct ccg tcc ttg atg gcc acc agc gac	2498
Ser Val Gly Gln Ala Val Asp Pro Pro Ser Leu Met Ala Thr Ser Asp	
655 660 665 670	
cct cct caa agt ctg gat acc tct ctc ttt ttt gga acg gcg gcc act	2546
Pro Pro Gln Ser Leu Asp Thr Ser Leu Phe Phe Gly Thr Ala Ala Thr	
671 676 681 686	
ggg ttt cag cag agc tcc tta aat atg gat gag gtc tca agt gta agt	2594
Gly Phe Gln Gln Ser Ser Leu Asn Met Asp Glu Val Ser Ser Val Ser	
687 692 697 702	
gtg ggg cca ttg gga tct ctg gac tct ttg gcc atg aaa aac tcc agt	2642
Val Gly Pro Leu Gly Ser Leu Asp Ser Leu Ala Met Lys Asn Ser Ser	
703 708 713 718	
cca gag cct cag gct ttg aca ccc agc agt aag cta aca gtg gac aca	2690
Pro Glu Pro Gln Ala Leu Thr Pro Ser Ser Lys Leu Thr Val Asp Thr	
719 724 729 734	
gat gct ctg act cct tcg agc acc ctt tgt gaa aac agt gtc tca gaa	2738
Asp Ala Leu Thr Pro Ser Ser Thr Leu Cys Glu Asn Ser Val Ser Glu	
735 740 745 750	
cta ctg aca cca acc aaa gcg gag tgg aac gta cat cct gac tct gac	2786
Leu Leu Thr Pro Thr Lys Ala Glu Trp Asn Val His Pro Asp Ser Asp	
751 756 761 766	
ttc ttt gga cag gag gga gaa acc cag ttt gga ttc ccc aat gca gca	2834
Phe Phe Gly Gln Glu Gly Glu Thr Gln Phe Gly Phe Pro Asn Ala Ala	
767 772 777 782	
gga aac cat ggt tct cag aaa gaa aca gat ctt atc act gtg act ggc	2882

Gly Asn His Gly Ser Gln Lys Glu Thr Asp Leu Ile Thr Val Thr Gly
 783 788 793 798

agc tca ttt ttg gta tga accaac tctattcatt cctcatcatg tggcttactt 2936
 Ser Ser Phe Leu Val *
 799 804

ttattacagt caattttgag gatattctgg actaaatatt taagtgcagt catttctttt 2996

tggtttgcaa aaagagcaca gccctggact acaagtttgg agatttaaatt ctgatcttga 3056

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tccgatccac tagtccagtg tgggtggaatt ccggctgcgt gagaggcgcg cggcggcgca 120

gtgaacagtc tccttcacaa aaacc atg gcg tcg ctc aaa tgt agc acc gtc 172
 Met Ala Ser Leu Lys Cys Ser Thr Val
 1 5

gtc tgc gtg atc tgc ttg gag aag ccc aaa tac cgc tgt cca gcc tgc 220
 Val Cys Val Ile Cys Leu Glu Lys Pro Lys Tyr Arg Cys Pro Ala Cys
 10 15 20 25

cgc gtg ccc tac tgc tcg gta gtc tgc ttc cgg aag cac aaa gaa cag 268
 Arg Val Pro Tyr Cys Ser Val Val Cys Phe Arg Lys His Lys Glu Gln
 26 31 36 41

tgc aac cct gaa act cgt cct gtt gag aaa aaa ata aga tca gct ctt 316
 Cys Asn Pro Glu Thr Arg Pro Val Glu Lys Lys Ile Arg Ser Ala Leu
 42 47 52 57

cct acc aaa acc gta aag cct gtg gaa aac aaa gat gat gat gac tct 364
 Pro Thr Lys Thr Val Lys Pro Val Glu Asn Lys Asp Asp Asp Ser
 58 63 68 73

ata gct gat ttt ctc aat agt gat gag gaa gaa gac aga gtt tct ttg	412
Ile Ala Asp Phe Leu Asn Ser Asp Glu Glu Glu Asp Arg Val Ser Leu	
74 79 84 89	
cag aat tta aag aat tta ggg gaa tct gca aca tta aga agc tta ttg	460
Gln Asn Leu Lys Asn Leu Gly Glu Ser Ala Thr Leu Arg Ser Leu Leu	
90 95 100 105	
ctc aat cca cac ctc agg cag ttg atg gtc aac ctc gat cag gga gaa	508
Leu Asn Pro His Leu Arg Gln Leu Met Val Asn Leu Asp Gln Gly Glu	
106 111 116 121	
gac aaa gca aag ctc atg aga gct tac atg caa gag cct ttg ttt gtg	556
Asp Lys Ala Lys Leu Met Arg Ala Tyr Met Gln Glu Pro Leu Phe Val	
122 127 132 137	
gag ttt gca gac tgc tgt tta gga att gtg gag cca tcc cag aat gag	604
Glu Phe Ala Asp Cys Cys Leu Gly Ile Val Glu Pro Ser Gln Asn Glu	
138 143 148 153	
gag tct taa gatggat tattgtgctg cttgctcaag cgtgtgcttg actcctggaa	660
Glu Ser *	
154	
cctgcctgct cctctccca gaccagctag tttggggctg gggagctcag gcaaaagagg	720
tttccaggat gcagattagg tcatgcaggc ctttaccggc attgatgtgg ctcattgttc	780
aggcagactt ggggtcctta aggtggcaag tcctttatgg agagaaaact tgacattcag	840
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gcttacactt catatggagt taaacttggt cagtgttaat aaaatcaaaa cgtgattcta	960
ctgtacattg cattattcat aatttaattg tttgaaatta cattaaataa atcaactaat	1020
taaatactaa agttttgttc ctttttaaag gaaataacca caagattttt ccagcccaa	1080
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tagtgaaaatg tggccctgat gtttcttaac cctgatttgg taactaccag ccctgacacc	1260
atcagtgcct gatgtagcct ggaaccccag gccactgac gcaactgggca cggggctctg	1320
ggtcgaaggc tggagccgtc actgttggtc atgtgcattt ggagcactgt gggaatagtc	1380
tggcagctgt gtgctgatta aatgtctttg gcaaggcagg gggcaggaaa aggccttggtg	1440
gaaacaaagg caccaaggat caccacagcc cagtgaaggc agaagaggtc acgtggatca	1500
gcctgtgtct ttccagcaga atctgattaa agcctgtaat gctgtagggt gaaggttcag	1560
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acc cag gcc atg agg gac aaa tgt gga gca agg gat gga gct gga act 96
 Thr Gln Ala Met Arg Asp Lys Cys Gly Ala Arg Asp Gly Ala Gly Thr
 17 22 27 32

tgc tat tat ggg acg tta aag ctg gca gga cct gag agc ctt aga tgg 144
 Cys Tyr Tyr Gly Thr Leu Lys Leu Ala Gly Pro Glu Ser Leu Arg Trp
 33 38 43 48

ctt gcc tta gat ggc gaa agg gat gtt gca gat aca atg aag aat ttt 192
 Leu Ala Leu Asp Gly Glu Arg Asp Val Ala Asp Thr Met Lys Asn Phe
 49 54 59 64

gag atg cgg att ctc ctg gat tac cca ggt ggg ccc agc aca atc act 240
 Glu Met Arg Ile Leu Leu Asp Tyr Pro Gly Gly Pro Ser Thr Ile Thr
 65 70 75 80

gga tca gag aga gta gaa gat gcc tct ttg ctg gct ttg aag atg gag 288
 Gly Ser Glu Arg Val Glu Asp Ala Ser Leu Leu Ala Leu Lys Met Glu
 81 86 91 96

gaa ggg gct atg agt gaa gga gga ggg aag aat agc cac tgt cta ctg 336
 Glu Gly Ala Met Ser Glu Gly Gly Gly Lys Asn Ser His Cys Leu Leu
 97 102 107 112

acc tct acc gtg agg ccc aga gca aca gct tac gga gcc agt ggc cca 384
 Thr Ser Thr Val Arg Pro Arg Ala Thr Ala Tyr Gly Ala Ser Gly Pro
 113 118 123 128

gac cct ggc cca gcc cgt gtg gcc tcc aga cgt ctg ggg gcc gca gtt 432
 Asp Pro Gly Pro Ala Arg Val Ala Ser Arg Arg Leu Gly Ala Ala Val
 129 134 139 144

ggg ctt ctg agt gca gac acg ctg tgg cct ctc aat ggc ctt gcc agg 480
 Gly Leu Leu Ser Ala Asp Thr Leu Trp Pro Leu Asn Gly Leu Ala Arg
 145 150 155 160

gca ata gat gag gaa att gag gct ctg aga gat gac tct ggg gac gac 528
 Ala Ile Asp Glu Glu Ile Glu Ala Leu Arg Asp Asp Ser Gly Asp Asp
 161 166 171 176

gac gag gct acc acc cca gcc gac aag agc gag ctg cac cac acc ctg	576
Asp Glu Ala Thr Thr Pro Ala Asp Lys Ser Glu Leu His His Thr Leu	
177 182 187 192	
aag aat ctt tcc ctg aag tta gat gac ctc agc acg tgc aat gac ctc	624
Lys Asn Leu Ser Leu Lys Leu Asp Asp Leu Ser Thr Cys Asn Asp Leu	
193 198 203 208	
atc gcc aag cac ggc gct gca ctc cag cgc tcc ctg aca gag ctg gac	672
Ile Ala Lys His Gly Ala Ala Leu Gln Arg Ser Leu Thr Glu Leu Asp	
209 214 219 224	
ggc ctc aag atc cca tct gag agt ggg gag aag ctg aag gtg gtg aat	720
Gly Leu Lys Ile Pro Ser Glu Ser Gly Glu Lys Leu Lys Val Val Asn	
225 230 235 240	
gag cgg gcc acc ctc ttc cgc atc aca tcc aat gct atg atc aac ggc	768
Glu Arg Ala Thr Leu Phe Arg Ile Thr Ser Asn Ala Met Ile Asn Gly	
241 246 251 256	
gct gca gcc atc ctc acc tca tat cag gaa tgg ctt cag ccc cag ggg	816
Ala Ala Ala Ile Leu Thr Ser Tyr Gln Glu Trp Leu Gln Pro Gln Gly	
257 262 267 272	
ttt gag gga aca agg tgc tca gag gtg gtt tct gga ttg gga atc tgg	864
Phe Glu Gly Thr Arg Cys Ser Glu Val Val Ser Gly Leu Gly Ile Trp	
273 278 283 288	
aac agc aac gct gtg ttt caa ccc ccc acg cct tta cca gtg ctg tac	912
Asn Ser Asn Ala Val Phe Gln Pro Pro Thr Pro Leu Pro Val Leu Tyr	
289 294 299 304	
ctt cta gaa cac ccc ttc ctc acc ctt cag cac agc cag gat ggg gcc	960
Leu Leu Glu His Pro Phe Leu Thr Leu Gln His Ser Gln Asp Gly Ala	
305 310 315 320	
tgg aga agg ccg gca gca gca gag gag acc ctg gga gtc agg gat gga	1008
Trp Arg Arg Pro Ala Ala Ala Glu Glu Thr Leu Gly Val Arg Asp Gly	
321 326 331 336	
cac cag gtg agg act ggt gtg ccc atc ttc ctc ctt tgg ggt ggg aca	1056
His Gln Val Arg Thr Gly Val Pro Ile Phe Leu Leu Trp Gly Gly Thr	
337 342 347 352	
gcc tgt gat gtg cat gga gct cag tgg gtg ctc cag gcc tgc agg gac	1104
Ala Cys Asp Val His Gly Ala Gln Trp Val Leu Gln Ala Cys Arg Asp	
353 358 363 368	
ttc ttg gaa cta gca gag ata cac agt cgg aaa tgg cag cgg gca ctg	1152
Phe Leu Glu Leu Ala Glu Ile His Ser Arg Lys Trp Gln Arg Ala Leu	
369 374 379 384	
cag tat gag cag gag cag cgc gtg cac ttg gag gaa acc att gag cag	1200
Gln Tyr Glu Gln Glu Gln Arg Val His Leu Glu Glu Thr Ile Glu Gln	
385 390 395 400	

ctg gcg aag cag cac aac agc ctc gag cgg gcc ttc cac agt gcc cct	1248
Leu Ala Lys Gln His Asn Ser Leu Glu Arg Ala Phe His Ser Ala Pro	
401 406 411 416	
ggc cgg ccg gcc aac ccc tcc aag agc ttc att gag gga agc ctc ttg	1296
Gly Arg Pro Ala Asn Pro Ser Lys Ser Phe Ile Glu Gly Ser Leu Leu	
417 422 427 432	
act ccc aaa gga gag gac agt gag gaa gat gaa gat acc gag tac ttt	1344
Thr Pro Lys Gly Glu Asp Ser Glu Glu Asp Glu Asp Thr Glu Tyr Phe	
433 438 443 448	
gat gcc atg gaa gac tcc aca tcc ttc atc acc gtg atc acc gag gcc	1392
Asp Ala Met Glu Asp Ser Thr Ser Phe Ile Thr Val Ile Thr Glu Ala	
449 454 459 464	
aag gaa gac agc aga aaa gct gaa ggt agc acc ggg aca agt tcc gtg	1440
Lys Glu Asp Ser Arg Lys Ala Glu Gly Ser Thr Gly Thr Ser Ser Val	
465 470 475 480	
gac tgg agc tca gca gac aat gta cta gat ggt gcc tgc ctc gtg ccc	1488
Asp Trp Ser Ser Ala Asp Asn Val Leu Asp Gly Ala Ser Leu Val Pro	
481 486 491 496	
aag ggt tca tcc aaa gtc aag agg cga gtc cgc att ccc aac aag ccc	1536
Lys Gly Ser Ser Lys Val Lys Arg Arg Val Arg Ile Pro Asn Lys Pro	
497 502 507 512	
aac tac agc ctt aac ctc tgg agc atc atg aag aac tgc atc ggc cgg	1584
Asn Tyr Ser Leu Asn Leu Trp Ser Ile Met Lys Asn Cys Ile Gly Arg	
513 518 523 528	
gag ctc tcc agg atc ccc atg ccg gtg aac ttc aat gag ccc ctg tcc	1632
Glu Leu Ser Arg Ile Pro Met Pro Val Asn Phe Asn Glu Pro Leu Ser	
529 534 539 544	
atg ctc cag cgg ctg aca gag gac ctg gag tac cac cac ctg ctg gac	1680
Met Leu Gln Arg Leu Thr Glu Asp Leu Glu Tyr His His Leu Leu Asp	
545 550 555 560	
aag gca gtg cac tgc acc agc tca gtg gag cag atg tgc ctg gtg gcc	1728
Lys Ala Val His Cys Thr Ser Ser Val Glu Gln Met Cys Leu Val Ala	
561 566 571 576	
gcc ttc tct gtg tcc tcc tac tcc acc aca gtg cac cgc atc gcc aag	1776
Ala Phe Ser Val Ser Ser Tyr Ser Thr Thr Val His Arg Ile Ala Lys	
577 582 587 592	
ccc ttc aac ccc atg ctg ggg gag acc ttc gag ctg gac cgc ctc gac	1824
Pro Phe Asn Pro Met Leu Gly Glu Thr Phe Glu Leu Asp Arg Leu Asp	
593 598 603 608	
gac atg ggc ctg cgc tcc ctc tgt gag cag gtg agc cac cac ccc ccc	1872
Asp Met Gly Leu Arg Ser Leu Cys Glu Gln Val Ser His His Pro Pro	
609 614 619 624	
tca gct gcg cac tac gtg ttc tcc aag cat ggc tgg agc ctc tgg cag	1920

Ser 625	Ala	Ala	His	Tyr	Val 630	Phe	Ser	Lys	His	Gly 635	Trp	Ser	Leu	Trp	Gln 640	
gag Glu 641	atc Ile	acc Thr	atc Ile	tcc Ser	agc Ser 646	aag Lys	ttc Phe	cgg Arg	gga Gly	aaa Lys 651	tac Tyr	atc Ile	tcc Ser	atc Ile	atg Met 656	1968
ccg Pro 657	cta Leu	ggt Gly	gcc Ala	atc Ile 662	cac His	tta Leu	gaa Glu	ttc Phe	cag Gln	gcc Ala 667	agt Ser	ggg Gly	aat Asn	cac His	tac Tyr 672	2016
gtg Val 673	tgg Trp	agg Arg	aag Lys	agc Ser 678	acc Thr	tca Ser	act Thr	gtt Val	cac His	aac Asn 683	atc Ile	atc Ile	gtg Val	ggc Gly	aag Lys 688	2064
ctc Leu 689	tgg Trp	atc Ile	gac Asp	cag Gln 694	tca Ser 694	ggg Gly	gac Asp	atc Ile	gag Glu	att Ile 699	gtg Val	aac Asn	cat His	aag Lys	acc Thr 704	2112
aat Asn 705	gac Asp	cgg Arg	tgc Cys	cag Gln 710	ctg Leu 710	aag Lys	ttc Phe	ctg Leu	ccc Pro	tac Tyr 715	agc Ser	tac Tyr	ttc Phe	tcc Ser	aaa Lys 720	2160
gag Glu 721	gca Ala	gcc Ala	cgg Arg	aag Lys 726	gtg Val 726	aca Thr	gga Gly	gtg Val	gtg Val	agt Ser 731	gac Asp	agc Ser	cag Gln	ggc Gly	aag Lys 736	2208
gcc Ala 737	cat His	tac Tyr	gtg Val	ctg Leu 742	tcc Ser 742	ggc Gly	tcg Ser	tgg Trp	gat Asp	gaa Glu 747	caa Gln	atg Met	gag Glu	tgc Cys	tcc Ser 752	2256
aag Lys 753	gtc Val	atg Met	cat His	agc Ser 758	agt Ser 758	ccc Pro	agc Ser	agc Ser	ccc Pro	agc Ser 763	tct Ser	gac Asp	ggg Gly	aag Lys	cag Gln 768	2304
aag Lys 769	aca Thr	gtg Val	tac Tyr	cag Gln 774	acc Thr 774	ctg Leu	tca Ser	gcc Ala	aag Lys	ctg Leu 779	ctg Leu	tgg Trp	aag Lys	aag Lys	tac Tyr 784	2352
ccg Pro 785	ctg Leu	ccg Pro	gag Glu	aac Asn 790	gcg Ala 790	gag Glu	aac Asn	atg Met	tac Tyr	tac Tyr 795	ttc Phe	tca Ser	gag Glu	ctg Leu	gcc Ala 800	2400
ctg Leu 801	acc Thr	ctc Leu	aac Asn	gag Glu 806	cac His 806	gag Glu	gag Glu	ggc Gly	gta Val	gcg Ala 811	cca Pro	acc Thr	gac Asp	agc Ser	cgc Arg 816	2448
ctg Leu 817	cgg Arg	ccc Pro	gac Asp	cag Gln 822	cgg Arg 822	ctg Leu	atg Met	gag Glu	aag Lys	ggc Gly 827	cgt Arg	tgg Trp	gac Asp	gag Glu	gcc Ala 832	2496
aat Asn 833	acc Thr	gag Glu	aag Lys	cag Gln 838	cgg Arg 838	ctg Leu	gag Glu	gag Glu	aag Lys	cag Gln 843	cgc Arg	ctg Leu	tcg Ser	cgg Arg	cgc Arg 848	2544
cgg Arg	cgg Arg	ctg Leu	gag Glu	gcc Ala	tgc Cys	ggg Gly	ccg Pro	ggc Gly	agc Ser	agc Ser	tgc Cys	agc Ser	tcg Ser	gag Glu	gaa Glu	2592

849	854	859	864	
gaa ggt gta aag gca ttt gac aaa att cag cca gtt tcc agg ggg cac				2640
Glu Gly Val Lys Ala Phe Asp Lys Ile Gln Pro Val Ser Arg Gly His				
865	870	875	880	
agc cca cgt ttc att ctg tgt gac tgc tgc ccc ctg gcg ccc aac tca				2688
Ser Pro Arg Phe Ile Leu Cys Asp Cys Cys Pro Leu Ala Pro Asn Ser				
881	886	891	896	
ggc agg act ggc aac tac cgg aag ctc gcg agg ctt cca aag cgc atg				2736
Gly Arg Thr Gly Asn Tyr Arg Lys Leu Ala Arg Leu Pro Lys Arg Met				
897	902	907	912	
cgc agg tca cgg tac ggg cac gtg cgg cgc gcc agc aaa acc acg cag				2784
Arg Arg Ser Arg Tyr Gly His Val Arg Arg Ala Ser Lys Thr Thr Gln				
913	918	923	928	
gcg tct tgt cgc ttc cgc ctc gag cgt gtg gcg gga ttg cgg aag ccc				2832
Ala Ser Cys Arg Phe Arg Leu Glu Arg Val Ala Gly Leu Arg Lys Pro				
929	934	939	944	
tcc aca gtt cat aac cgt tgg ctg gtt atg aac cgt tca taa				2874
Ser Thr Val His Asn Arg Trp Leu Val Met Asn Arg Ser *				
945	950	955		

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ggccttggtt ttagtattgc tggaggtcga gactgcatto gtggacag atg ggg att	177
Met Gly Ile	
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ttt gtc aag acc atc ttc cca aat gga tca gct gca gag gac gga aga	225
Phe Val Lys Thr Ile Phe Pro Asn Gly Ser Ala Ala Glu Asp Gly Arg	
4 9 14 19	
ctt aaa gaa ggg gat gaa atc cta gat gta aat gga ata cca ata aag	273
Leu Lys Glu Gly Asp Glu Ile Leu Asp Val Asn Gly Ile Pro Ile Lys	
20 25 30 35	
ggc ttg aca ttt caa gaa gcc att cat acc ttt aag caa atc cgg agt	321

Gly	Leu	Thr	Phe	Gln	Glu	Ala	Ile	His	Thr	Phe	Lys	Gln	Ile	Arg	Ser	
36					41					46					51	
gga	tta	ttt	gtt	tta	acg	gta	cgc	aca	aag	ttg	gtg	agc	ccc	agc	ctc	369
Gly	Leu	Phe	Val	Leu	Thr	Val	Arg	Thr	Lys	Leu	Val	Ser	Pro	Ser	Leu	
52					57					62					67	
aca	ccc	tgc	tgc	aca	ccc	aca	cac	atg	agc	aga	tcc	gcc	tcc	ccg	aac	417
Thr	Pro	Cys	Ser	Thr	Pro	Thr	His	Met	Ser	Arg	Ser	Ala	Ser	Pro	Asn	
68					73					78					83	
ttc	aat	acc	agt	ggg	gga	gcc	tcg	gcg	gga	ggg	tcc	gat	gaa	ggc	agt	465
Phe	Asn	Thr	Ser	Gly	Gly	Ala	Ser	Ala	Gly	Gly	Ser	Asp	Glu	Gly	Ser	
84					89					94					99	
tct	tca	tcc	ctg	ggg	cgg	aag	acc	cct	ggg	ccc	aag	gac	agg	atc	gtc	513
Ser	Ser	Ser	Leu	Gly	Arg	Lys	Thr	Pro	Gly	Pro	Lys	Asp	Arg	Ile	Val	
100					105					110					115	
atg	gaa	gta	aca	ctc	aac	aaa	gag	cca	aga	gtt	gga	tta	ggc	att	ggg	561
Met	Glu	Val	Thr	Leu	Asn	Lys	Glu	Pro	Arg	Val	Gly	Leu	Gly	Ile	Gly	
116					121					126					131	
gcc	tgc	tgc	ttg	gct	ctg	gaa	aac	agt	cct	cct	ggc	atc	tac	att	cac	609
Ala	Cys	Cys	Leu	Ala	Leu	Glu	Asn	Ser	Pro	Pro	Gly	Ile	Tyr	Ile	His	
132					137					142					147	
agc	ctt	gct	cca	gga	tca	gtg	gcc	aag	atg	gag	agc	aac	ctg	agc	cgc	657
Ser	Leu	Ala	Pro	Gly	Ser	Val	Ala	Lys	Met	Glu	Ser	Asn	Leu	Ser	Arg	
148					153					158					163	
ggg	gat	caa	atc	ctg	gaa	gtg	aac	tcc	gtc	aac	gtc	cgc	cat	gct	gct	705
Gly	Asp	Gln	Ile	Leu	Glu	Val	Asn	Ser	Val	Asn	Val	Arg	His	Ala	Ala	
164					169					174					179	
tta	agc	aaa	gtc	cac	gcc	atc	ttg	agt	aaa	tgc	cct	cca	gga	ccc	gtt	753
Leu	Ser	Lys	Val	His	Ala	Ile	Leu	Ser	Lys	Cys	Pro	Pro	Gly	Pro	Val	
180					185					190					195	
cgc	ctt	gtc	atc	ggc	cgg	cac	cct	aat	cca	aag	gac	tcc	ctt	att	tct	801
Arg	Leu	Val	Ile	Gly	Arg	His	Pro	Asn	Pro	Lys	Asp	Ser	Leu	Ile	Ser	
196					201					206					211	
gaa	tct	gaa	ctc	tcc	cag	tac	ttt	gcc	cac	gat	gtc	cct	ggc	ccc	ttg	849
Glu	Ser	Glu	Leu	Ser	Gln	Tyr	Phe	Ala	His	Asp	Val	Pro	Gly	Pro	Leu	
212					217					222					227	
tca	gac	ttc	atg	gtg	gcc	ggg	tct	gag	gac	gag	gat	cac	ccg	gga	agt	897
Ser	Asp	Phe	Met	Val	Ala	Gly	Ser	Glu	Asp	Glu	Asp	His	Pro	Gly	Ser	
228					233					238					243	
ggc	tgc	agc	acg	tgc	gag	gag	ggc	agc	ctg	cct	ccc	agc	acc	tcc	act	945
Gly	Cys	Ser	Thr	Ser	Glu	Glu	Gly	Ser	Leu	Pro	Pro	Ser	Thr	Ser	Thr	
244					249					254					259	
cac	aag	gag	cct	gga	aaa	ccc	aga	gcc	aac	agc	ctc	gtg	act	ctt	ggg	993
His	Lys	Glu	Pro	Gly	Lys	Pro	Arg	Ala	Asn	Ser	Leu	Val	Thr	Leu	Gly	

260	265	270	275	
agc cat cgg gct tct ggg ctc ttc cac aag	cag gtg aca gtt gcc aga	1041		
Ser His Arg Ala Ser Gly Leu Phe His Lys	Gln Val Thr Val Ala Arg			
276	281	286	291	
caa gcc agt ctc ccc gga agc cca cag gcc ctc cga aac cct ctc ctc		1089		
Gln Ala Ser Leu Pro Gly Ser Pro Gln Ala Leu Arg Asn Pro Leu Leu				
292	297	302	307	
cgc cag agg aag gta ggc tgc tac gat gcc aac gat gcc agt gat gag		1137		
Arg Gln Arg Lys Val Gly Cys Tyr Asp Ala Asn Asp Ala Ser Asp Glu				
308	313	318	323	
gaa gag ttt gac aga gaa ggg gac tgc att tca ctc cca ggg gcc ctc		1185		
Glu Glu Phe Asp Arg Glu Gly Asp Cys Ile Ser Leu Pro Gly Ala Leu				
324	329	334	339	
ccg ggt ccc atc agg cct ctg tca gag gat gac ccg agg cgt gtc tca		1233		
Pro Gly Pro Ile Arg Pro Leu Ser Glu Asp Asp Pro Arg Arg Val Ser				
340	345	350	355	
att tcc tct tcc aag ggc atg gac gtc cac aac caa gag gaa cga ccc		1281		
Ile Ser Ser Ser Lys Gly Met Asp Val His Asn Gln Glu Glu Arg Pro				
356	361	366	371	
cgg aaa aca ctg gtg agc aag gcc atc tgc gca cct ctt ctt ggt agc		1329		
Arg Lys Thr Leu Val Ser Lys Ala Ile Ser Ala Pro Leu Leu Gly Ser				
372	377	382	387	
tca gtg gac tta gag gag agt atc cca gag ggc atg gtg gat gct gcg		1377		
Ser Val Asp Leu Glu Glu Ser Ile Pro Glu Gly Met Val Asp Ala Ala				
388	393	398	403	
tcc tat gca gcc aac ctc acg gac tct gca gag gcc ccc aag ggg agc		1425		
Ser Tyr Ala Ala Asn Leu Thr Asp Ser Ala Glu Ala Pro Lys Gly Ser				
404	409	414	419	
cct gga agc tgg tgg aag aag gaa ctg tca gga tca agt agc gca ccc		1473		
Pro Gly Ser Trp Trp Lys Lys Glu Leu Ser Gly Ser Ser Ser Ala Pro				
420	425	430	435	
aaa ttg gaa tac aca gtc cgt aca gac acc cag agt ccg acg aac act		1521		
Lys Leu Glu Tyr Thr Val Arg Thr Asp Thr Gln Ser Pro Thr Asn Thr				
436	441	446	451	
ggg agc ccc agt tcc ccc cag cag aaa agt gaa ggc ctg ggc tcc agg		1569		
Gly Ser Pro Ser Ser Pro Gln Gln Lys Ser Glu Gly Leu Gly Ser Arg				
452	457	462	467	
cac aga cca gtg gcc agg gta agc ccc cac tgc aag aga tcc gag gct		1617		
His Arg Pro Val Ala Arg Val Ser Pro His Cys Lys Arg Ser Glu Ala				
468	473	478	483	
gag gcc aag ccc agt ggc tca cag aca gtg aac ctg act ggc aga gcc		1665		
Glu Ala Lys Pro Ser Gly Ser Gln Thr Val Asn Leu Thr Gly Arg Ala				
484	489	494	499	

aat gat cca tgc gat ctg gac tcg aga gtc cag gcc act tct gtc aaa	1713
Asn Asp Pro Cys Asp Leu Asp Ser Arg Val Gln Ala Thr Ser Val Lys	
500 505 510 515	
gtg act gtc gct ggc ttt cag cca ggt gga gct gtg gag aag gaa tct	1761
Val Thr Val Ala Gly Phe Gln Pro Gly Gly Ala Val Glu Lys Glu Ser	
516 521 526 531	
ctg gga aag ctg acc act gga gat gct tgt gtc tct acc agc tgt gaa	1809
Leu Gly Lys Leu Thr Thr Gly Asp Ala Cys Val Ser Thr Ser Cys Glu	
532 537 542 547	
cta gcc agt gct ctg tcc cat ctg gat gcc agc cac ctc aca gag aac	1857
Leu Ala Ser Ala Leu Ser His Leu Asp Ala Ser His Leu Thr Glu Asn	
548 553 558 563	
ctg ccc aaa gct gca tca gag ctg ggg caa caa ccc atg act gaa ctg	1905
Leu Pro Lys Ala Ala Ser Glu Leu Gly Gln Gln Pro Met Thr Glu Leu	
564 569 574 579	
gac agc tcc tcg gac ctc atc tct tcc cca ggg aag aag ggg gcc gct	1953
Asp Ser Ser Ser Asp Leu Ile Ser Ser Pro Gly Lys Lys Gly Ala Ala	
580 585 590 595	
cat cct gac ccc agc aag acc tct gta gac aca ggg aaa gtc agt cgg	2001
His Pro Asp Pro Ser Lys Thr Ser Val Asp Thr Gly Lys Val Ser Arg	
596 601 606 611	
cca gag aat ccc agc cag cct gca tcg ccc agg gtc gcc aag tgc aag	2049
Pro Glu Asn Pro Ser Gln Pro Ala Ser Pro Arg Val Ala Lys Cys Lys	
612 617 622 627	
gcc agg tct cca gtc agg ctc ccc cat gag ggc agc ccc tcc cca ggg	2097
Ala Arg Ser Pro Val Arg Leu Pro His Glu Gly Ser Pro Ser Pro Gly	
628 633 638 643	
gag aaa gca gcg gct ccc cct gac tac agc aag act cga tca gca tcg	2145
Glu Lys Ala Ala Ala Pro Pro Asp Tyr Ser Lys Thr Arg Ser Ala Ser	
644 649 654 659	
gaa acc agc aca ccc cac aat acc agg agg gtg gct gcc ctc agg gga	2193
Glu Thr Ser Thr Pro His Asn Thr Arg Arg Val Ala Ala Leu Arg Gly	
660 665 670 675	
gcg gga cct gga gca gag gga atg aca cca gct ggt gct gtc ctg cca	2241
Ala Gly Pro Gly Ala Glu Gly Met Thr Pro Ala Gly Ala Val Leu Pro	
676 681 686 691	
gga gac ccc ctc aca tcc cag gag cag aga cag gga gct cca ggt aac	2289
Gly Asp Pro Leu Thr Ser Gln Glu Gln Arg Gln Gly Ala Pro Gly Asn	
692 697 702 707	
cac agt aag gct ctg gaa atg aca gga atc cat gca cct gaa agc tcc	2337
His Ser Lys Ala Leu Glu Met Thr Gly Ile His Ala Pro Glu Ser Ser	
708 713 718 723	

cag gag cct tcc ctg ctg gag gga gca gat tct gtg tcc tca agg gca	2385
Gln Glu Pro Ser Leu Leu Glu Gly Ala Asp Ser Val Ser Ser Arg Ala	
724 729 734 739	
ccg cag gcc agc ctc tcc atg ctg cca tcc act gac aac acc aaa gaa	2433
Pro Gln Ala Ser Leu Ser Met Leu Pro Ser Thr Asp Asn Thr Lys Glu	
740 745 750 755	
gca tgt ggc cat gtc tcg ggg cac tgc tgc ccg ggg ggg agt aga gag	2481
Ala Cys Gly His Val Ser Gly His Cys Cys Pro Gly Gly Ser Arg Glu	
756 761 766 771	
agc cct gtg acg gac att gac agc ttc atc aag gag ctg gat gct tct	2529
Ser Pro Val Thr Asp Ile Asp Ser Phe Ile Lys Glu Leu Asp Ala Ser	
772 777 782 787	
gca gca agg tct ccg tct tcc cag acg ggg gac agt ggc tct cag gag	2577
Ala Ala Arg Ser Pro Ser Ser Gln Thr Gly Asp Ser Gly Ser Gln Glu	
788 793 798 803	
ggc agt gct cag ggc cac cca cca gcc ggg gct gga ggt ggg agc tcc	2625
Gly Ser Ala Gln Gly His Pro Pro Ala Gly Ala Gly Gly Gly Ser Ser	
804 809 814 819	
tgc cgt gcc gaa cca gtc ccg ggg ggc cag acc tcc tcc ccg agg agg	2673
Cys Arg Ala Glu Pro Val Pro Gly Gly Gln Thr Ser Ser Pro Arg Arg	
820 825 830 835	
gcc tgg gct gct ggt gcc ccc gcc tac cca caa tgg gcc tcc cag cct	2721
Ala Trp Ala Ala Gly Ala Pro Ala Tyr Pro Gln Trp Ala Ser Gln Pro	
836 841 846 851	
tcg gtt tta gat tca att aat ccc gac aaa cat ttt act gtg aac aaa	2769
Ser Val Leu Asp Ser Ile Asn Pro Asp Lys His Phe Thr Val Asn Lys	
852 857 862 867	
aac ttt ctg agc aac tac tct aga aat ttt agc agt ttt cat gaa gac	2817
Asn Phe Leu Ser Asn Tyr Ser Arg Asn Phe Ser Ser Phe His Glu Asp	
868 873 878 883	
agc acc tcc cta tca ggc ctg ggt gac agc acg gag ccg tct ctg tca	2865
Ser Thr Ser Leu Ser Gly Leu Gly Asp Ser Thr Glu Pro Ser Leu Ser	
884 889 894 899	
tcc atg tat ggc gat gct gag gat tct tct tct gac cct gag tca ctc	2913
Ser Met Tyr Gly Asp Ala Glu Asp Ser Ser Ser Asp Pro Glu Ser Leu	
900 905 910 915	
act gaa gcc cca cga gct tct gcc agg gac ggc tgg tcc cct cct cgt	2961
Thr Glu Ala Pro Arg Ala Ser Ala Arg Asp Gly Trp Ser Pro Pro Arg	
916 921 926 931	
tcc cgt gtg tct ttg cac aag gaa gat cct tcg gag tca gaa gag gaa	3009
Ser Arg Val Ser Leu His Lys Glu Asp Pro Ser Glu Ser Glu Glu Glu	
932 937 942 947	
cag att gag att tgt tcc aca cgt ggc tgc ccc aat cca ccc tcg agt	3057

Gln Ile Glu Ile Cys Ser Thr Arg Gly Cys Pro Asn Pro Pro Ser Ser	
948 953 958 963	
cct gct cat ctt ccc acc cag gct gcc atc tgt cct gcc tca gcc aaa	3105
Pro Ala His Leu Pro Thr Gln Ala Ala Ile Cys Pro Ala Ser Ala Lys	
964 969 974 979	
gtt ctg tca tta aaa tac agc act ccg aga gag tgc gtg gcc agt ccc	3153
Val Leu Ser Leu Lys Tyr Ser Thr Pro Arg Glu Ser Val Ala Ser Pro	
980 985 990 995	
cgt gag aag gcc gcc tgc ttg cca ggc tca tac act tca ggc cca gac	3201
Arg Glu Lys Ala Ala Cys Leu Pro Gly Ser Tyr Thr Ser Gly Pro Asp	
996 1001 1006 1011	
tct tcc cag cca tca tca ctc ttg gag atg agc tct cag gag cat gaa	3249
Ser Ser Gln Pro Ser Ser Leu Leu Glu Met Ser Ser Gln Glu His Glu	
1012 1017 1022 1027	
act cat gcg gac ata agc act tca cag aac cac agg ccc tgc tgt gca	3297
Thr His Ala Asp Ile Ser Thr Ser Gln Asn His Arg Pro Ser Cys Ala	
1028 1033 1038 1043	
gaa gaa acc aca gaa gtc acc agc gct agc tca gcc atg gaa aac agt	3345
Glu Glu Thr Thr Glu Val Thr Ser Ala Ser Ser Ala Met Glu Asn Ser	
1044 1049 1054 1059	
ccg ctg tct aaa gta gcc agg cat ttt cac agt ccg ccc atc att ctc	3393
Pro Leu Ser Lys Val Ala Arg His Phe His Ser Pro Pro Ile Ile Leu	
1060 1065 1070 1075	
agc tcc ccc aac atg gta aat ggc ttg gaa cat gac ctg cta gat gac	3441
Ser Ser Pro Asn Met Val Asn Gly Leu Glu His Asp Leu Leu Asp Asp	
1076 1081 1086 1091	
gaa acc ctg aat caa tac gaa aca agc att aat gca gct gcc agt ctg	3489
Glu Thr Leu Asn Gln Tyr Glu Thr Ser Ile Asn Ala Ala Ala Ser Leu	
1092 1097 1102 1107	
tcc tcc ttc agt gtg gat gtc cct aag aat gga gaa tct gtt ttg gaa	3537
Ser Ser Phe Ser Val Asp Val Pro Lys Asn Gly Glu Ser Val Leu Glu	
1108 1113 1118 1123	
aac ctc cac atc tct gaa agt caa gac ctg gat gac ttg cta cag aaa	3585
Asn Leu His Ile Ser Glu Ser Gln Asp Leu Asp Asp Leu Leu Gln Lys	
1124 1129 1134 1139	
cca aaa atg atc gct agg agg ccc atc atg gcc tgg ttt aaa gaa ata	3633
Pro Lys Met Ile Ala Arg Arg Pro Ile Met Ala Trp Phe Lys Glu Ile	
1140 1145 1150 1155	
aat aaa cat aac caa ggc aca cat ttg agg agc aaa acc gag aag gaa	3681
Asn Lys His Asn Gln Gly Thr His Leu Arg Ser Lys Thr Glu Lys Glu	
1156 1161 1166 1171	
caa cct cta atg cct gcc aga agt ccc gac tcc aag att cag atg gtg	3729
Gln Pro Leu Met Pro Ala Arg Ser Pro Asp Ser Lys Ile Gln Met Val	

1172	1177	1182	1187	
agt tca agc caa aaa aag ggc gtt act gtg cct cat agc cct cct cag				3777
Ser Ser Ser Gln Lys Lys Gly Val Thr Val Pro His Ser Pro Pro Gln				
1188	1193	1198	1203	
ccg aaa aca aac ctg gaa aat aag gac ctg tct aag aag agt ccg gca				3825
Pro Lys Thr Asn Leu Glu Asn Lys Asp Leu Ser Lys Lys Ser Pro Ala				
1204	1209	1214	1219	
gaa atg ctt ctg act aat ggt cag aag gca aag tgt ggt ccg aag ctg				3873
Glu Met Leu Leu Thr Asn Gly Gln Lys Ala Lys Cys Gly Pro Lys Leu				
1220	1225	1230	1235	
aag agg ctc agc ctc aag ggc aag gcc aaa gtc aac tct gag gcc cct				3921
Lys Arg Leu Ser Leu Lys Gly Lys Ala Lys Val Asn Ser Glu Ala Pro				
1236	1241	1246	1251	
gct gcg aat gct gtg aag gct ggg ggg acg gac cac agg aaa ccc ttg				3969
Ala Ala Asn Ala Val Lys Ala Gly Gly Thr Asp His Arg Lys Pro Leu				
1252	1257	1262	1267	
atc tca ccc cag acc tcc cac aaa aca ctt tct aag gca gtg tca cag				4017
Ile Ser Pro Gln Thr Ser His Lys Thr Leu Ser Lys Ala Val Ser Gln				
1268	1273	1278	1283	
cgg ctc cat gta gcc gac cac gag gac cct gac aga aac acc aca gct				4065
Arg Leu His Val Ala Asp His Glu Asp Pro Asp Arg Asn Thr Thr Ala				
1284	1289	1294	1299	
gcc ccc agg tcc ccc cag tgt gtg ctg gaa agc aag cca cct ctt gcc				4113
Ala Pro Arg Ser Pro Gln Cys Val Leu Glu Ser Lys Pro Pro Leu Ala				
1300	1305	1310	1315	
acc tct ggg cca ctg aaa ccc tca gtg tct gac acg agc atc agg aca				4161
Thr Ser Gly Pro Leu Lys Pro Ser Val Ser Asp Thr Ser Ile Arg Thr				
1316	1321	1326	1331	
ttt gtc tcg ccc ctg acc tct ccc aag cct gtt cct gag caa ggc atg				4209
Phe Val Ser Pro Leu Thr Ser Pro Lys Pro Val Pro Glu Gln Gly Met				
1332	1337	1342	1347	
tgg agc agg ttc cac atg gct gtc ctc tct gaa ccc gac aga ggt tgc				4257
Trp Ser Arg Phe His Met Ala Val Leu Ser Glu Pro Asp Arg Gly Cys				
1348	1353	1358	1363	
cca acc acc cct aaa tct cct aag tgt aga gca gag ggc agg gcg ccc				4305
Pro Thr Thr Pro Lys Ser Pro Lys Cys Arg Ala Glu Gly Arg Ala Pro				
1364	1369	1374	1379	
cgt gct gac tcc ggg ccg gtg agt ccg gca gcg tct agg aac ggc atg				4353
Arg Ala Asp Ser Gly Pro Val Ser Pro Ala Ala Ser Arg Asn Gly Met				
1380	1385	1390	1395	
tcc gtg gca ggg aac aga cag agt gag ccg cgc ctg gcc agc cat gtg				4401
Ser Val Ala Gly Asn Arg Gln Ser Glu Pro Arg Leu Ala Ser His Val				
1396	1401	1406	1411	

gca gca gac aca gcc caa ccc agg ccg act ggc gaa aaa gga ggc aac	4449
Ala Ala Asp Thr Ala Gln Pro Arg Pro Thr Gly Glu Lys Gly Gly Asn	
1412 1417 1422 1427	
ata atg gcc agc gat cgc ctc gaa aga aca aac cag ctg aaa atc gtg	4497
Ile Met Ala Ser Asp Arg Leu Glu Arg Thr Asn Gln Leu Lys Ile Val	
1428 1433 1438 1443	
gag att tct gct gaa gca gtg tca gag act gta tgt ggt aac aag cca	4545
Glu Ile Ser Ala Glu Ala Val Ser Glu Thr Val Cys Gly Asn Lys Pro	
1444 1449 1454 1459	
gct gaa agc gac aga cgg gga ggg tgc ttg gcc cag ggc aac tgt cag	4593
Ala Glu Ser Asp Arg Arg Gly Gly Cys Leu Ala Gln Gly Asn Cys Gln	
1460 1465 1470 1475	
gag aag agt gaa atc agg ctc tat cgc cag gtc gca gaa tca tcc aca	4641
Glu Lys Ser Glu Ile Arg Leu Tyr Arg Gln Val Ala Glu Ser Ser Thr	
1476 1481 1486 1491	
agt cat cca tcc tca ctc cca tct cat gcc tcc cag gca gag cag gaa	4689
Ser His Pro Ser Ser Leu Pro Ser His Ala Ser Gln Ala Glu Gln Glu	
1492 1497 1502 1507	
atg tca cga tca ttc agc atg aca aaa ctg gcg tcc tcc tcc tcc tcc	4737
Met Ser Arg Ser Phe Ser Met Thr Lys Leu Ala Ser Ser Ser Ser Ser	
1508 1513 1518 1523	
ctt caa aca gcc att aga aag gca gaa tac tcc cag gga aaa tca agc	4785
Leu Gln Thr Ala Ile Arg Lys Ala Glu Tyr Ser Gln Gly Lys Ser Ser	
1524 1529 1534 1539	
ctg atg tca gac tcc cga ggg gtg ccc aga aac agc att cca ggg ggc	4833
Leu Met Ser Asp Ser Arg Gly Val Pro Arg Asn Ser Ile Pro Gly Gly	
1540 1545 1550 1555	
ccc tcg ggg gag gac cat ctc tac ttc acc cca agg cca gcg acc agg	4881
Pro Ser Gly Glu Asp His Leu Tyr Phe Thr Pro Arg Pro Ala Thr Arg	
1556 1561 1566 1571	
acc tac tcc atg cca gcc cag ttc tca agc cat ttt gga cgg gag ggt	4929
Thr Tyr Ser Met Pro Ala Gln Phe Ser Ser His Phe Gly Arg Glu Gly	
1572 1577 1582 1587	
cac ccc cca cac agc ctg ggt cgc tct cgg gac agc cag gtc cct gtg	4977
His Pro Pro His Ser Leu Gly Arg Ser Arg Asp Ser Gln Val Pro Val	
1588 1593 1598 1603	
aca agc agt gtt gtc ccc gag gca aag gca tcc aga ggt ggt ctt ccc	5025
Thr Ser Ser Val Val Pro Glu Ala Lys Ala Ser Arg Gly Gly Leu Pro	
1604 1609 1614 1619	
agc ctg gct aat gga cag ggc ata tat agt gta aag ccg ctg ctg gac	5073
Ser Leu Ala Asn Gly Gln Gly Ile Tyr Ser Val Lys Pro Leu Leu Asp	
1620 1625 1630 1635	

aca tcg agg aat ctt cca gcc aca gat gaa ggg gat atc att tca gtc	5121
Thr Ser Arg Asn Leu Pro Ala Thr Asp Glu Gly Asp Ile Ile Ser Val	
1636 1641 1646 1651	
cag gag acg agc tgc cta gtc aca gac aaa atc aaa gtc acc aga cga	5169
Gln Glu Thr Ser Cys Leu Val Thr Asp Lys Ile Lys Val Thr Arg Arg	
1652 1657 1662 1667	
cac tac tgc tat gag cag aac tgg ccc cat gaa tct acc tca ttt ttc	5217
His Tyr Cys Tyr Glu Gln Asn Trp Pro His Glu Ser Thr Ser Phe Phe	
1668 1673 1678 1683	
tct gtg aag cag cgg atc aag tct ttt gag aac ctg gcc aat gct gac	5265
Ser Val Lys Gln Arg Ile Lys Ser Phe Glu Asn Leu Ala Asn Ala Asp	
1684 1689 1694 1699	
cgg cct gta gcc aag tcc ggg gct tcc cca ttt ttg tgc gtg agc tcc	5313
Arg Pro Val Ala Lys Ser Gly Ala Ser Pro Phe Leu Ser Val Ser Ser	
1700 1705 1710 1715	
aag cct ccc att ggg agg cgg tct tcc ggc agc att gtt tcc ggg agc	5361
Lys Pro Pro Ile Gly Arg Arg Ser Ser Gly Ser Ile Val Ser Gly Ser	
1716 1721 1726 1731	
ctg ggc cac cca ggt gac gca gca gca agg ttg ttg aga cgc agc ttg	5409
Leu Gly His Pro Gly Asp Ala Ala Ala Arg Leu Leu Arg Arg Ser Leu	
1732 1737 1742 1747	
agt tcc tgc agc gaa aac caa agc gaa gcc ggc acc ctc ctg ccc cag	5457
Ser Ser Cys Ser Glu Asn Gln Ser Glu Ala Gly Thr Leu Leu Pro Gln	
1748 1753 1758 1763	
atg gcc aag tct ccc tca atc atg aca ctg acc atc tct cgg cag aac	5505
Met Ala Lys Ser Pro Ser Ile Met Thr Leu Thr Ile Ser Arg Gln Asn	
1764 1769 1774 1779	
cca cca gag acc agt agc aag ggc tct gat tgc gaa cta aag aaa tca	5553
Pro Pro Glu Thr Ser Ser Lys Gly Ser Asp Ser Glu Leu Lys Lys Ser	
1780 1785 1790 1795	
ctt ggt cct ttg gga att ccc acc cca acg atg acc ctg gct tct cct	5601
Leu Gly Pro Leu Gly Ile Pro Thr Pro Thr Met Thr Leu Ala Ser Pro	
1796 1801 1806 1811	
gtt aag agg aac aag tcc tgc gta cgc cac acg cag ccc tgc ccc gtg	5649
Val Lys Arg Asn Lys Ser Ser Val Arg His Thr Gln Pro Ser Pro Val	
1812 1817 1822 1827	
tcc cgc tcc aag ctc cag gag ctg aga gcc ttg agc atg cct gac ctt	5697
Ser Arg Ser Lys Leu Gln Glu Leu Arg Ala Leu Ser Met Pro Asp Leu	
1828 1833 1838 1843	
gac aag ctc tgc agc gag gat tac tca gca ggg ccg agc gcc gtg ctc	5745
Asp Lys Leu Cys Ser Glu Asp Tyr Ser Ala Gly Pro Ser Ala Val Leu	
1844 1849 1854 1859	
ttc aaa act gag ctg gag atc acc ccc agg agg tca cct ggc cct cct	5793

Phe	Lys	Thr	Glu	Leu	Glu	Ile	Thr	Pro	Arg	Arg	Ser	Pro	Gly	Pro	Pro		
1860					1865				1870					1875			
gct	gga	ggc	gtt	tgc	tgt	ccc	gag	aag	ggc	ggg	aac	agg	gcc	tgt	cca	5841	
Ala	Gly	Gly	Val	Ser	Cys	Pro	Glu	Lys	Gly	Gly	Asn	Arg	Ala	Cys	Pro		
1876					1881				1886					1891			
gga	gga	agt	ggc	cct	aaa	acc	agt	gct	gct	gag	aca	ccc	agt	tca	gcc	5889	
Gly	Gly	Ser	Gly	Pro	Lys	Thr	Ser	Ala	Ala	Glu	Thr	Pro	Ser	Ser	Ala		
1892					1897					1902				1907			
agt	gat	acg	ggt	gaa	gct	gcc	cag	gat	ctg	cct	ttt	aga	aga	agc	tgg	5937	
Ser	Asp	Thr	Gly	Glu	Ala	Ala	Gln	Asp	Leu	Pro	Phe	Arg	Arg	Ser	Trp		
1908					1913					1918				1923			
tca	gtt	aat	ttg	gat	caa	ctt	cta	gtc	tca	gcg	ggg	gac	cag	caa	aga	5985	
Ser	Val	Asn	Leu	Asp	Gln	Leu	Leu	Val	Ser	Ala	Gly	Asp	Gln	Gln	Arg		
1924					1929					1934				1939			
tta	cag	tct	gtt	tta	tgc	tca	gtg	gga	tgc	aaa	tct	acc	atc	cta	act	6033	
Leu	Gln	Ser	Val	Leu	Ser	Ser	Val	Gly	Ser	Lys	Ser	Thr	Ile	Leu	Thr		
1940					1945					1950				1955			
ctc	att	cag	gaa	gcg	aaa	gca	caa	tca	gag	aat	gaa	gaa	gat	gtt	tgc	6081	
Leu	Ile	Gln	Glu	Ala	Lys	Ala	Gln	Ser	Glu	Asn	Glu	Glu	Asp	Val	Cys		
1956					1961					1966				1971			
ttc	ata	gtc	ttg	aat	aga	aaa	gaa	ggc	tca	ggt	ctg	gga	ttc	agt	gtg	6129	
Phe	Ile	Val	Leu	Asn	Arg	Lys	Glu	Gly	Ser	Gly	Leu	Gly	Phe	Ser	Val		
1972					1977					1982				1987			
gca	gga	ggg	aca	gat	gtg	gag	cca	aaa	tca	atc	acg	gtc	cac	agg	gtg	6177	
Ala	Gly	Gly	Thr	Asp	Val	Glu	Pro	Lys	Ser	Ile	Thr	Val	His	Arg	Val		
1988					1993					1998				2003			
ttt	tct	cag	ggg	gcg	gct	tct	cag	gaa	ggg	act	atg	aac	cga	ggg	gat	6225	
Phe	Ser	Gln	Gly	Ala	Ala	Ser	Gln	Glu	Gly	Thr	Met	Asn	Arg	Gly	Asp		
2004					2009					2014				2019			
ttc	ctt	ctg	tca	gtc	aac	ggc	gcc	tca	ctg	gct	ggc	tta	gcc	cac	ggg	6273	
Phe	Leu	Leu	Ser	Val	Asn	Gly	Ala	Ser	Leu	Ala	Gly	Leu	Ala	His	Gly		
2020					2025					2030				2035			
aat	gtc	ctg	aag	gtt	ctg	cac	cag	gca	cag	ctg	cac	aaa	gat	gcc	ctc	6321	
Asn	Val	Leu	Lys	Val	Leu	His	Gln	Ala	Gln	Leu	His	Lys	Asp	Ala	Leu		
2036					2041					2046				2051			
gtg	gtc	atc	aag	aaa	ggg	atg	gat	cag	ccc	agg	ccc	tct	gcc	cgg	cag	6369	
Val	Val	Ile	Lys	Lys	Gly	Met	Asp	Gln	Pro	Arg	Pro	Ser	Ala	Arg	Gln		
2052					2057					2062				2067			
gag	cct	ccc	aca	gcc	aat	ggg	aag	ggt	ttg	ctg	tcc	aga	aag	acc	atc	6417	
Glu	Pro	Pro	Thr	Ala	Asn	Gly	Lys	Gly	Leu	Leu	Ser	Arg	Lys	Thr	Ile		
2068					2073					2078				2083			
ccc	ctg	gag	cct	ggc	att	ggg	aga	agt	gtg	gct	gta	cac	gat	gct	ctg	6465	
Pro	Leu	Glu	Pro	Gly	Ile	Gly	Arg	Ser	Val	Ala	Val	His	Asp	Ala	Leu		

2084	2089	2094	2099	
tgt gtt gaa gtg ctg aag acc tcg gct ggg ctg gga ctg agt ctg gat				6513
Cys Val Glu Val Leu Lys Thr Ser Ala Gly Leu Gly Leu Ser Leu Asp				
2100	2105	2110	2115	
ggg gga aaa tca tcg gtg acg gga gat ggg ccc ttg gtc att aaa aga				6561
Gly Gly Lys Ser Ser Val Thr Gly Asp Gly Pro Leu Val Ile Lys Arg				
2116	2121	2126	2131	
gtg tac aaa ggt ggt gtg gct gaa caa gct gga ata ata gaa gct gga				6609
Val Tyr Lys Gly Gly Val Ala Glu Gln Ala Gly Ile Ile Glu Ala Gly				
2132	2137	2142	2147	
gat gaa att ctt gct att aat ggg aaa cct ctg gtt ggg ctc atg cac				6657
Asp Glu Ile Leu Ala Ile Asn Gly Lys Pro Leu Val Gly Leu Met His				
2148	2153	2158	2163	
ttt gat gcc tgg aat att atg aag tct gtc cca gaa gga cct gtg cag				6705
Phe Asp Ala Trp Asn Ile Met Lys Ser Val Pro Glu Gly Pro Val Gln				
2164	2169	2174	2179	
tta tta att aga aag cat agg aat tct tca tga attttaac aagaatcatt				6756
Leu Leu Ile Arg Lys His Arg Asn Ser Ser *				
2180	2185	2190		
ttctcagttc tcttcttttct ttagcaaatac agagtgaactt ctttaaacca caggttgttg				6816
aaatggccaa cactggtaca gacacggact ataaaaatct ccaagcttgt gcttacacat				6876
gaagcctgac ttaactgtat gtgcaacagc aatgaaatta actccagaag ccttccacct				6936
gcgtcaccca ggccgggagg gttccttctg tccagtgcct gtcccctacc tttatgttat				6996
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 ttttgcgtgtg gaaagacttc acgtcttgcc gaatgaaagt cccgcctgtc tgtaacgctg 360
 atg ccc gtg cag ctg tct gag cac ccg gaa tgg aat gag tct atg cac 408
 Met Pro Val Gln Leu Ser Glu His Pro Glu Trp Asn Glu Ser Met His
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 Ser Leu Arg Ile Ser Val Gly Gly Leu Pro Val Leu Ala Ser Met Thr
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 Lys Ala Ala Asp Pro Arg Phe Arg Pro Arg Trp Lys Val Ile Leu Thr
 33 38 43 48
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 Phe Phe Val Gly Ala Ala Ile Leu Trp Leu Leu Cys Ser His Arg Pro
 49 54 59 64
 gcc ccc ggc agg ccc ccc acc cac aat gca cac aac tgg agg ctc ggc 600
 Ala Pro Gly Arg Pro Pro Thr His Asn Ala His Asn Trp Arg Leu Gly
 65 70 75 80
 cag gcg ccc gcc aac tgg tac aat gac acc tac ccc ctg tct ccc cca 648
 Gln Ala Pro Ala Asn Trp Tyr Asn Asp Thr Tyr Pro Leu Ser Pro Pro
 81 86 91 96
 caa agg aca ccg gct ggg att cgg tat cga atc gca gtt atc gca gac 696
 Gln Arg Thr Pro Ala Gly Ile Arg Tyr Arg Ile Ala Val Ile Ala Asp

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Leu Asp Thr Glu Ser Arg Ala Gln Glu Glu Asn Thr Trp Phe Ser Tyr				
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Lys Gly Arg Gly Met Glu Leu Ser Asp Leu Ile Val Phe Asn Gly Lys				
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Val Asp His Glu Asn Trp Val Ser Asn Tyr Asn Ala Leu Arg Ala Ala				
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Ala Gly Ile Gln Pro Pro Gly Tyr Leu Ile His Glu Ser Ala Cys Trp				
273	278	283	288	
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Glu Arg Tyr Ser Glu Lys Asp Asp Glu Arg Lys Gly Ala Asn Leu Leu				
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Ala Val Val Pro Thr His Gly Phe Ser Ser Phe Lys Phe Ile Pro Asn	
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acc gac gac cag atc att gtg gcc ctc aaa tcc gag gag gac agc ggc	1464
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Ile *	
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Met Asn Gly Glu Glu Glu Tyr Gly Ser Gly
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Ala Ala Leu Ala Pro Leu Pro Pro Leu Pro Ala Gln Phe Lys Ser Ile
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cag cat cat ctg agg acg gct cag gag cat gac aag cga gac cct gtg 435
Gln His His Leu Arg Thr Ala Gln Glu His Asp Lys Arg Asp Pro Val
43 48 53 58

gtg gct tat tac tgt cgt tta tac gca atg cag act gga atg aag atc 483
Val Ala Tyr Tyr Cys Arg Leu Tyr Ala Met Gln Thr Gly Met Lys Ile
59 64 69 74

gat agt aaa act cct gaa tgt cgc aaa ttt tta tca aag tta atg gat 531
Asp Ser Lys Thr Pro Glu Cys Arg Lys Phe Leu Ser Lys Leu Met Asp
75 80 85 90

cag tta gaa gct cta aag aag cag ttg ggt gat aat gaa gct att act 579
Gln Leu Glu Ala Leu Lys Lys Gln Leu Gly Asp Asn Glu Ala Ile Thr
91 96 101 106

caa gaa ata gtg ggc tgt gcc cat ttg gag aat tat gct ttg aaa atg 627
Gln Glu Ile Val Gly Cys Ala His Leu Glu Asn Tyr Ala Leu Lys Met
107 112 117 122

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Phe Leu Tyr Ala Asp Asn Glu Asp Arg Ala Gly Arg Phe His Lys Asn
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139 144 149 154

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Val Phe Gly Glu Leu Thr Asp Glu Asn Val Lys His Arg Lys Tyr Ala
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Lys Tyr Cys Lys Tyr Ala Gly Ser Ala Leu Gln Tyr Glu Asp Val Ser	
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 Met Glu Ala Tyr Leu Pro Lys Lys Asn Gly Leu Tyr Leu Ser Leu Val
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 129 134 139 144

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Ile Leu Ile Ser Phe Thr Cys Arg Phe Leu Leu Asn Ser Arg Val Thr	
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gat gct gcc ttc aac ttc ctg ctg gtc tgg tac tac tgc acc ctg acc	584
Asp Ala Ala Phe Asn Phe Leu Leu Val Trp Tyr Tyr Cys Thr Leu Thr	
161 166 171 176	
atc cgg gag agc atc ctc atc aac aac ggc tcc cgg atc aaa ggc tgg	632
Ile Arg Glu Ser Ile Leu Ile Asn Asn Gly Ser Arg Ile Lys Gly Trp	
177 182 187 192	
tgg gtg ttc cat cac tac gtg tcc acc ttc ctg tgc gga gtc atg ctg	680
Trp Val Phe His His Tyr Val Ser Thr Phe Leu Ser Gly Val Met Leu	
193 198 203 208	
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Thr Trp Pro Asp Gly Leu Met Tyr Gln Lys Phe Arg Asn Gln Phe Leu	
209 214 219 224	
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Ser Phe Ser Met Tyr Gln Ser Phe Val Gln Phe Leu Gln Tyr Tyr Tyr	
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Gln Ser Gly Cys Leu Tyr Arg Leu Arg Ala Leu Gly Glu Arg His Thr	
241 246 251 256	
atg gac ctc act gtg gag ggc ttc cag tcc tgg atg tgg cgg ggc ctc	872
Met Asp Leu Thr Val Glu Gly Phe Gln Ser Trp Met Trp Arg Gly Leu	
257 262 267 272	
acc ttc ctg ctg cct ttt ctt ttc ttt gga cac ttc tgg cag ctt ttt	920
Thr Phe Leu Leu Pro Phe Leu Phe Phe Gly His Phe Trp Gln Leu Phe	
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Asn Ala Leu Thr Leu Phe Asn Leu Ala Gln Asp Pro Gln Cys Lys Glu	
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Trp Gln Val Leu Met Cys Gly Phe Pro Phe Leu Leu Leu Phe Leu Gly	
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Asn Phe Phe Thr Thr Leu Arg Val Val His Gln Leu His His Ala Ala	
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Glu Glu Ala Ala Pro Gly Ala Gly Pro Ser Pro Glu Glu Met Gln Thr	
337 342 347 352	
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Leu Pro Pro Ser Arg Gly Arg Gly Gly Arg Thr Gly Ala Gly Glu Pro	
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Leu Gly Leu Leu Ala Leu Met Asp Leu Ser Glu Ser Ser Asn Trp Gly	
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Cys Tyr Gly Asn Ile Gln Ser Leu Asp Thr Pro Gly Ala Ser Cys Gly	
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Ile Gly Arg Arg His Gly Leu Asn Tyr Cys Gly Val Arg Ala Ser Glu	
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Arg Leu Ala Glu Ile Asp Met Pro Tyr Leu Leu Lys Tyr Gln Pro Met	
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Met Gln Thr Ile Gly Gln Lys Tyr Cys Met Asp Pro Ala Val Ile Ala	
72 77 82 87	
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Gly Val Leu Ser Arg Lys Ser Pro Gly Asp Lys Ile Leu Val Asn Met	
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Gly Asp Arg Thr Ser Met Val Gln Asp Pro Gly Ser Gln Ala Pro Thr	
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Ser Trp Ile Ser Glu Ser Gln Val Ser Gln Thr Thr Glu Val Leu Thr	
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Thr Arg Ile Lys Glu Ile Gln Arg Arg Phe Pro Thr Trp Thr Pro Asp	
136 141 146 151	
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Gln Tyr Leu Arg Gly Gly Leu Cys Ala Tyr Ser Gly Gly Ala Gly Tyr	
152 157 162 167	
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Val Arg Ser Ser Gln Asp Leu Ser Cys Asp Phe Cys Asn Asp Val Leu	
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Ala Arg Ala Lys Tyr Leu Lys Arg His Gly Phe *	
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Gly Lys Ala Thr Pro Pro Tyr Asp Val Gln Phe His Met Glu Ala Ser
9 14 19 24

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Val Glu Asn Cys Ile Ile Val Ser Met Asn Thr Ala Asp Pro Gly Ser
25 30 35 40

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Gln Gly Ile Thr His Ser Leu Leu Leu Gln Val Ile Asp Asp Lys Gly
41 46 51 56

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57 62 67 72

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Pro Val Arg Pro Val Ser Leu Phe Met Cys Tyr Glu Gly Asp Pro Glu
73 78 83 88

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Lys Thr Ala Lys Val Glu Cys Gly Asp Phe Tyr Asn Thr Gly Asp Arg
89 94 99 104

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Gly Lys Met Asp Glu Glu Gly Tyr Ile Cys Phe Leu Gly Arg Ser Asp
105 110 115 120

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Asp Ile Ile Asn Ala Ser Gly Tyr Arg Ile Gly Pro Ala Glu Val Glu
121 126 131 136

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Ser Ala Leu Val Glu His Pro Ala Val Ala Glu Ser Ala Val Val Gly
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agc cca gac ccg att cga ggg gag gtg gtg aag gcc ttt att gtc ctg 531

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Thr	Pro	Gln	Phe	Leu	Ser	His	Asp	Lys	Asp	Gln	Leu	Thr	Lys	Glu	Leu	
169					174					179					184	
cag	cag	cat	gtc	aag	tca	gtg	aca	gcc	cca	tac	aag	tac	cca	agg	aag	627
Gln	Gln	His	Val	Lys	Ser	Val	Thr	Ala	Pro	Tyr	Lys	Tyr	Pro	Arg	Lys	
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Val	Glu	Phe	Val	Ser	Glu	Leu	Pro	Lys	Thr	Ile	Thr	Gly	Lys	Ile	Glu	
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cgg	aag	gaa	ctt	cgg	aaa	aag	gag	act	ggt	cag	atg	taa	tcggcagtga			724
Arg	Lys	Glu	Leu	Arg	Lys	Lys	Glu	Thr	Gly	Gln	Met	*				
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Pro Gly Phe Met Gly Lys Ala Thr Pro Pro Tyr Asp Val Gln Val Ile																
5 10 15 20																
gat gac aag ggc agc atc ctg cca cct aac aca gaa gga aac att ggc																331

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Ile	Arg	Ile	Lys	Pro	Val	Arg	Pro	Val	Ser	Leu	Phe	Met	Cys	Tyr	Glu		
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Gly	Asp	Pro	Glu	Lys	Thr	Ala	Lys	Val	Glu	Cys	Gly	Asp	Phe	Tyr	Asn		
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Thr	Gly	Asp	Arg	Gly	Lys	Met	Asp	Glu	Glu	Gly	Tyr	Ile	Cys	Phe	Leu		
69					74					79					84		
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Gly	Arg	Ser	Asp	Asp	Ile	Ile	Asn	Ala	Ser	Gly	Tyr	Arg	Ile	Gly	Pro		
85					90					95					100		
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Ala	Glu	Val	Glu	Ser	Ala	Leu	Val	Glu	His	Pro	Ala	Val	Ala	Glu	Ser		
101					106					111					116		
gcc	gtg	gtg	ggc	agc	cca	gac	ccg	att	cga	ggg	gag	gtg	gtg	aag	gcc		619
Ala	Val	Val	Gly	Ser	Pro	Asp	Pro	Ile	Arg	Gly	Glu	Val	Val	Lys	Ala		
117					122					127					132		
ttt	att	gtc	ctg	acc	cca	cag	ttc	ctg	tcc	cat	gac	aag	gat	cag	ctg		667
Phe	Ile	Val	Leu	Thr	Pro	Gln	Phe	Leu	Ser	His	Asp	Lys	Asp	Gln	Leu		
133					138					143					148		
acc	aag	gaa	ctg	cag	cag	cat	gtc	aag	tca	gtg	aca	gcc	cca	tac	aag		715
Thr	Lys	Glu	Leu	Gln	Gln	His	Val	Lys	Ser	Val	Thr	Ala	Pro	Tyr	Lys		
149					154					159					164		
tac	cca	agg	aag	gtg	gag	ttt	gtc	tca	gag	ctg	cca	aaa	acc	atc	act		763
Tyr	Pro	Arg	Lys	Val	Glu	Phe	Val	Ser	Glu	Leu	Pro	Lys	Thr	Ile	Thr		
165					170					175					180		
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Gly	Lys	Ile	Glu	Arg	Lys	Glu	Leu	Arg	Lys	Lys	Glu	Thr	Gly	Gln	Met		
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taa	tcgg	cagtgaactc	agaacgcact	gcacacctga	ggcaaatccc	tggccacttt											868
*																	
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 Met Val Ala His
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 Ile Asn Asn Ser Arg Leu Lys Ala Lys Gly Val Gly Gln His Asp Asn
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 gcc cag aac ttt ggt aac cag agc ttt gag gag ctg cga gca gcc tgt 211
 Ala Gln Asn Phe Gly Asn Gln Ser Phe Glu Glu Leu Arg Ala Ala Cys
 21 26 31 36
 cta aga aag ggg gag ctc ttc gag gac ccc tta ttc cct gct gaa ccc 259
 Leu Arg Lys Gly Glu Leu Phe Glu Asp Pro Leu Phe Pro Ala Glu Pro
 37 42 47 52
 agc tca ctg ggc ttc aag gac ctg ggc ccc aac tcc aaa aat gtg cag 307
 Ser Ser Leu Gly Phe Lys Asp Leu Gly Pro Asn Ser Lys Asn Val Gln
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 Asn Ile Ser Trp Gln Arg Pro Lys Asp Ile Ile Asn Asn Pro Leu Phe
 69 74 79 84
 atc atg gat ggg att tct cca aca gac atc tgc cag ggg atc ctc ggg 403
 Ile Met Asp Gly Ile Ser Pro Thr Asp Ile Cys Gln Gly Ile Leu Gly
 85 90 95 100
 gac tgc tgg ctg ctg gct gcc atc ggc tcc ctt acc acc tgc ccc aaa 451
 Asp Cys Trp Leu Leu Ala Ala Ile Gly Ser Leu Thr Thr Cys Pro Lys
 101 106 111 116
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 117 122 127 132
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 Ala Gly Ile Phe His Phe Gln Ile Trp Gln Phe Gly Gln Trp Val Asn
 133 138 143 148
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 Val Val Val Asp Asp Arg Leu Pro Thr Lys Asn Asp Lys Leu Val Phe
 149 154 159 164

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Val His Ser Thr Glu Arg Ser Glu Phe Trp Ser Ala Leu Leu Glu Lys	
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Ala Tyr Ala Lys Leu Ser Gly Ser Tyr Glu Ala Leu Ser Gly Gly Ser	
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Thr Met Glu Gly Leu Glu Asp Phe Thr Gly Gly Val Ala Gln Ser Phe	
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Gln Leu Gln Arg Pro Pro Gln Asn Leu Leu Arg Leu Leu Arg Lys Ala	
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Val Glu Arg Ser Ser Leu Met Gly Cys Ser Ile Glu Val Thr Ser Asp	
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Ser Glu Leu Glu Ser Met Thr Asp Lys Met Leu Val Arg Gly His Ala	
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Phe Tyr Glu Gly Ser Trp Arg Arg Gly Ser Ser Ala Gly Gly Cys Arg	
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Asn His Pro Gly Thr Phe Trp Thr Asn Pro Gln Phe Lys Ile Ser Leu	
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Cys Thr Cys Leu Val	Ala Leu Met Gln Lys	Asn Trp Arg His Ala Arg	
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Gln Gln Gly Ala Gln	Leu Gln Thr Ile Gly	Phe Val Leu Tyr Ala Val	
421	426	431	436
cca aaa gag ttt cag	aac att cag gat gtc	cac ttg aag aag gaa ttc	1459
Pro Lys Glu Phe Gln	Asn Ile Gln Asp Val	His Leu Lys Lys Glu Phe	
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ttc acg aag tat cag	gac cac ggc ttc tca	gag atc ttc acc aac tca	1507
Phe Thr Lys Tyr Gln	Asp His Gly Phe Ser	Glu Ile Phe Thr Asn Ser	
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cgg gag gtg agc agc	caa ctc cgg ctg cct	ccg ggg gaa tat atc att	1555
Arg Glu Val Ser Ser	Gln Leu Arg Leu Pro	Pro Gly Glu Tyr Ile Ile	
469	474	479	484
att ccc tcc acc ttt	gag cca cac aga gat	gct gac ttc ctg ctt cgg	1603
Ile Pro Ser Thr Phe	Glu Pro His Arg Asp	Ala Asp Phe Leu Leu Arg	
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gtc ttc acc gag aag	cac agc gag tca tgg	gaa ttg gat gaa gtc aac	1651
Val Phe Thr Glu Lys	His Ser Glu Ser Trp	Glu Leu Asp Glu Val Asn	
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tat gct gag caa ctc	caa gag gaa aag gtc	tct gag gat gac atg gac	1699
Tyr Ala Glu Gln Leu	Gln Glu Glu Lys Val	Ser Glu Asp Asp Met Asp	
517	522	527	532
cag gac ttc cta cat	ttg ttt aag ata gtg	gca gga gag ggc aag gag	1747
Gln Asp Phe Leu His	Leu Phe Lys Ile Val	Ala Gly Glu Gly Lys Glu	
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Ile Gly Val Tyr Glu	Leu Gln Arg Leu Leu	Asn Arg Met Ala Ile Lys	
549	554	559	564
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Phe Lys Ser Phe Lys	Thr Lys Gly Phe Gly	Leu Asp Ala Cys Arg Cys	
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gag ttc aag atc ctg	tgg aaa aaa ctc aag	aaa tgg atg gac atc ttc	1939
Glu Phe Lys Ile Leu	Trp Lys Lys Leu Lys	Lys Trp Met Asp Ile Phe	
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Arg Glu Cys Asp Gln	Asp His Ser Gly Thr	Leu Asn Ser Tyr Glu Met	

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Gln Val Leu Val Ala Arg Tyr Ala Asp Asp	Asp Leu Ile Ile Asp Phe			
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Phe Leu Thr Met Asp Pro Lys Asn Thr Gly His Ile Cys Leu Ser Leu				
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cgagaagccg tccaggaaac	atg ctc tca ggg gac ccc cat ctg cct cag			110
	Met Leu Ser Gly Asp Pro His Leu Pro Gln			
	1	5		
cct ctt tgt cac tgc ctg gac cat tgt ccc tgc tgt ttc tca ggc acc				158
Pro Leu Cys His Cys Leu Asp His Cys Pro Cys Cys Phe Ser Gly Thr				
11	16	21	26	
acc agg acc agc tga tcattccagc ccacagcaat ggagccacat gactcctccc				213
Thr Arg Thr Ser *				
27				
acatggactc tgagttccga tacactctct tcccgattgt ttacagcatc atctttgtgc				273
tcgggggtcat tgctaattggc tacgtgctgt gggctctttgc ccgcctgtac ccttgcaaga				333

aattcaatga gataaagatc ttcattggtga acctcaccat ggcggacatg ctcttcttga 393
tcaccttgcc acttttgatt gtctactacc aaaaccaggg caactggata ctccccaat 453
tcctgtgcaa cgttggtggc tgccttttct tcatcaacac ctactgctct gtggccttcc 513
tggtgggtcat cacttataac cgtttccagg cagtaactcg gccatcaag actgctcagg 573
ccaacacccg caagcgtggc atctctttgt ccttggtcat ctgggtggcc attgtgggag 633
ctgcaccta ctctctcatc ctggactcca ccaacacagt gccgcacagt gctgggtcag 693
gcaacgtcac tcgctgcttt gagcattacg agaagggcag cgtgccagtc ctcatcatcc 753
acatcttcat cgtgttcagc ttcttctggt tcttctcat catctcttc tgcaacctgg 813
tcatcatccg taccttgctc atgcagccgg tgcagcagca gcgcaacgct gaagtcaagc 873
gccgggcgct gtggatggtg tgcacggtct tggcgggtgt catcatctgc ttctgtcccc 933
accagtggtg gcagctgccc tggacccttg ctgagctggg cttccaggac agcaaattcc 993
accaggccat taatgatgca catcaggtca cctctgctt ccttagcacc aactgtgtct 1053
tagaccctgt tatctactgt ttctcacca aaaagttccg caagcacctc accgaaaagt 1113
tctacagcat gcgcagtagc cggaattgct cccgggccac caccgatacg gtcactgaag 1173
tggttgtgcc attcaaccag atccctggca attccctcaa aaattagtcc ctgcttccat 1233
gcctgaagtc ttctcctcca tgaacatcat ggactgagct gggggaagaa gggatatcta 1293
ctgtgggtct gggcaccacc tctgtgggct ctggtgggcc attagatttg gaggtacct 1353
cacctgggca gggatgatgg cagagccagg ctgttggaat atccagaact caaatgagcc 1413
ccttcatccg cctgtgggag catactacag taactgtgac tgatgacttt atcctgagtc 1473
ccttaatctt atggggccgg aaggaatgtc agggccaggt gcagaccttg ggggaagact 1533
ttaaacca 1541

<210> 358
<211> 523
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (71)..(448)

<400> 358
gacacgcgtt cgaacctatg caaatgccca ctccctgcca acctacgtga agagcccagc 60

tccctgccag	atg acc tac atc aaa agt cca gct ccc tgc cag acc cag	109
	Met Thr Tyr Ile Lys Ser Pro Ala Pro Cys Gln Thr Gln	
	1 5 10	
acg tgc tat gtc cag ggt gct tct cct tgc cag agc tat tat gtt caa	157	
Thr Cys Tyr Val Gln Gly Ala Ser Pro Cys Gln Ser Tyr Tyr Val Gln		
14 19 24 29		
gct cct gca agt ggc tca acc tcc cag tac tgt gtc act gac cca tgc	205	
Ala Pro Ala Ser Gly Ser Thr Ser Gln Tyr Cys Val Thr Asp Pro Cys		
30 35 40 45		
tct gct ccc tgt tcc acc agc tac tgc tgt ctg gct ccc cgg acc ttc	253	
Ser Ala Pro Cys Ser Thr Ser Tyr Cys Cys Leu Ala Pro Arg Thr Phe		
46 51 56 61		
ggg gtg agt ccc ctg aga cgc tgg att cag cgg ccc cag aac tgc aac	301	
Gly Val Ser Pro Leu Arg Arg Trp Ile Gln Arg Pro Gln Asn Cys Asn		
62 67 72 77		
aca gga tca tct ggc tgc tgt gag aat tcg gga agc tct ggg tgc tgt	349	
Thr Gly Ser Ser Gly Cys Cys Glu Asn Ser Gly Ser Ser Gly Cys Cys		
78 83 88 93		
ggt tct ggg ggc tgt ggc tgc agc tgt gga tgt ggc agc tct ggg tgc	397	
Gly Ser Gly Gly Cys Gly Cys Ser Cys Gly Cys Gly Ser Ser Gly Cys		
94 99 104 109		
tgc tgt ttg gga att atc ccc atg aag tcc cga agt cct gcg ttg ctg	445	
Cys Cys Leu Gly Ile Ile Pro Met Lys Ser Arg Ser Pro Ala Leu Leu		
110 115 120 125		
tga ccat gaggatgact gctgctgcta aacatacgcac agctcaactc cagaatgcac	502	
*		
126		
tgccccgcta cccctctgga a	523	

<210> 359
 <211> 1783
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (133)..(1548)

<220>
 <221> misc_feature
 <222> (1)...(1783)
 <223> n = a,t,c or g

<400> 359
 gaggtcanag cactggagcc aacaccgccc caggatgggg tataaaaaggg ttgggaggag 60

aggaggcttc agtctcagtg gctcagcctt cccagctgat ctgaagctcc tgtgcagcct 120

cagccctaca cc atg acc tcc ttc tac agc acc tcc tca tgc cct ctg 168
Met Thr Ser Phe Tyr Ser Thr Ser Ser Cys Pro Leu
1 5 10

ggt tgc acc atg gct cct gga gca aga aat gtc ttt gtc tct cct atc 216
Gly Cys Thr Met Ala Pro Gly Ala Arg Asn Val Phe Val Ser Pro Ile
13 18 23 28

gat gtt ggg tgc cag cct gtg gca gag gcc aat gct gcc tcc atg tgc 264
Asp Val Gly Cys Gln Pro Val Ala Glu Ala Asn Ala Ala Ser Met Cys
29 34 39 44

ctc ttg gcc aac gtg gca cac gcc aac aga gtc cgt gtg ggg tgc act 312
Leu Leu Ala Asn Val Ala His Ala Asn Arg Val Arg Val Gly Ser Thr
45 50 55 60

ccc ctg ggc cgc ccc agc ctc tgt ctg ccc cca acc agt cac act gct 360
Pro Leu Gly Arg Pro Ser Leu Cys Leu Pro Pro Thr Ser His Thr Ala
61 66 71 76

tgt ccc ttg cca ggg acc tgt cac att ccc ggc aac atc gga atc tgt 408
Cys Pro Leu Pro Gly Thr Cys His Ile Pro Gly Asn Ile Gly Ile Cys
77 82 87 92

ggg gcc tac ggc aaa aac acc ctg aat ggc cat gag aag gag acc atg 456
Gly Ala Tyr Gly Lys Asn Thr Leu Asn Gly His Glu Lys Glu Thr Met
93 98 103 108

aag ttc ctg aat gac cgc ctg gcc aac tac ctg gag aag gtg cgc cag 504
Lys Phe Leu Asn Asp Arg Leu Ala Asn Tyr Leu Glu Lys Val Arg Gln
109 114 119 124

ctg gag cag gag aat gca gag ctg gag acc aca ctc ctc gag agg agc 552
Leu Glu Gln Glu Asn Ala Glu Leu Glu Thr Thr Leu Leu Glu Arg Ser
125 130 135 140

aag tgc cac gag tcc acc gtg tgc ccc gac tac cag tcc tac ttc cgt 600
Lys Cys His Glu Ser Thr Val Cys Pro Asp Tyr Gln Ser Tyr Phe Arg
141 146 151 156

aca atc gag gag ctc cag cag aag atc ctg tgc agc aag gct gag aat 648
Thr Ile Glu Glu Leu Gln Gln Lys Ile Leu Cys Ser Lys Ala Glu Asn
157 162 167 172

gcc agg ctg att gta caa att gac aac gcg aag ctg gct gct gat gac 696
Ala Arg Leu Ile Val Gln Ile Asp Asn Ala Lys Leu Ala Ala Asp Asp
173 178 183 188

ttt agg atc aag ctg gag agt gag cgc tcc ctt cac cag ctg gtg gag 744
Phe Arg Ile Lys Leu Glu Ser Glu Arg Ser Leu His Gln Leu Val Glu
189 194 199 204

gcg gac aag tgc ggg acg cag aag ctc ctg gat gac gcg acc ctg gcc 792
Ala Asp Lys Cys Gly Thr Gln Lys Leu Leu Asp Asp Ala Thr Leu Ala

205	210	215	220	
aag gcc gac ctg gag gcc cag cag gag tcc ctg aag gag gag cag ctc				840
Lys Ala Asp Leu Glu Ala Gln Gln Glu Ser Leu Lys Glu Glu Gln Leu				
221	226	231	236	
tcc ctc aag agc aac cac gag cag gaa gta aag att ctg agg agt cag				888
Ser Leu Lys Ser Asn His Glu Gln Glu Val Lys Ile Leu Arg Ser Gln				
237	242	247	252	
ctg ggg gag aag ttc cgg atc gag ctg gac att gag ccc acc att gac				936
Leu Gly Glu Lys Phe Arg Ile Glu Leu Asp Ile Glu Pro Thr Ile Asp				
253	258	263	268	
ctg aac agg gtg ttg ggg gag atg cgg gct cag tac gag gcc atg gtg				984
Leu Asn Arg Val Leu Gly Glu Met Arg Ala Gln Tyr Glu Ala Met Val				
269	274	279	284	
gag acc aac cac cag gat gtg gaa cag tgg ttc caa gcc cag tct gaa				1032
Glu Thr Asn His Gln Asp Val Glu Gln Trp Phe Gln Ala Gln Ser Glu				
285	290	295	300	
ggc atc agc ctg cag gcc atg tcc tgc tcc gag gag ctg cag tgc tgc				1080
Gly Ile Ser Leu Gln Ala Met Ser Cys Ser Glu Glu Leu Gln Cys Cys				
301	306	311	316	
cag tgc gag atc ctg gag ctg aga tgc acg gtg aat gcc ctg gag gtg				1128
Gln Ser Glu Ile Leu Glu Leu Arg Cys Thr Val Asn Ala Leu Glu Val				
317	322	327	332	
gag cgc caa gcc cag cac acc ttg aag gac tgt ctg cag aac tcc ctg				1176
Glu Arg Gln Ala Gln His Thr Leu Lys Asp Cys Leu Gln Asn Ser Leu				
333	338	343	348	
tgt gaa gcg gag gac cgc tac ggc aca gag ctg gcc cag atg cag agc				1224
Cys Glu Ala Glu Asp Arg Tyr Gly Thr Glu Leu Ala Gln Met Gln Ser				
349	354	359	364	
ctc att agc aac ttg gaa gag cag ttg tct gag atc cgg gcc gac ctg				1272
Leu Ile Ser Asn Leu Glu Glu Gln Leu Ser Glu Ile Arg Ala Asp Leu				
365	370	375	380	
gag cgg cag aac cag gag tac cag gtg ctg ctg gac gtg aag gcc cgg				1320
Glu Arg Gln Asn Gln Glu Tyr Gln Val Leu Leu Asp Val Lys Ala Arg				
381	386	391	396	
ttg gag aac gag att gcc aca tac cgg aac ctt act ccc ctg caa tcc				1368
Leu Glu Asn Glu Ile Ala Thr Tyr Arg Asn Leu Thr Pro Leu Gln Ser				
397	402	407	412	
ctg ttc cac gcc tgc ctc ctg tac ttc ttg tcc aag ctg tgg ccc tgt				1416
Leu Phe His Ala Cys Leu Leu Tyr Phe Leu Ser Lys Leu Trp Pro Cys				
413	418	423	428	
cac cgg tgg gtc tcc ctc tgg cca tgg agc cag cat ggg gag atg att				1464
His Arg Trp Val Ser Leu Trp Pro Trp Ser Gln His Gly Glu Met Ile				
429	434	439	444	

ctg aag gcc cga gtt agg aga ttg agg ctg gtt gca ctg ggg tca gga 1512
 Leu Lys Ala Arg Val Arg Arg Leu Arg Leu Val Ala Leu Gly Ser Gly
 445 450 455 460

gtg ccc tca cct tgc cca gtc ttc ctt caa gac tag actc actgaggcat 1562
 Val Pro Ser Pro Cys Pro Val Phe Leu Gln Asp *
 461 466 471

tttccctaaa tcaaccggta gcagatactt ccaaggagtg gctccctgcc tatgcctcta 1622

agctgtatatt tttgttggtg ctaaaatggt gtaattatct tccatgaaag caattatttt 1682

tccgtgtgtc tcttcttggt acttttagtt ctattccagt gtttcagaat ctccaaaaat 1742

gtaactgggt tccctgcatt aaatggtcaa taaacctcct t 1783

<210> 360
 <211> 422
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (47)..(403)

<220>
 <221> misc_feature
 <222> (1)...(422)
 <223> n = a,t,c or g

<400> 360
 tgatctgctg cagtgcctga accagcttta ttcagcttct acagag atg tcc tgc 55
 Met Ser Cys
 1

cag cag agc cag cag cag tgc cag cct cct ccc aaa tgt acc cct aaa 103
 Gln Gln Ser Gln Gln Gln Cys Gln Pro Pro Pro Lys Cys Thr Pro Lys
 4 9 14 19

tgc cct ccc aag tgt act cct aag tgt cct ccc aag tgt ccc cca aaa 151
 Cys Pro Pro Lys Cys Thr Pro Lys Cys Pro Pro Lys Cys Pro Pro Lys
 20 25 30 35

tgc cct ccc cag tat tca gcc cca tgc cca cct cca gtc tct tcc tgc 199
 Cys Pro Pro Gln Tyr Ser Ala Pro Cys Pro Pro Pro Val Ser Ser Cys
 36 41 46 51

tgt ggt tcc agc tct ggg ggc tgc tgc agc tct gag ggt ggt ggc tgc 247
 Cys Gly Ser Ser Ser Gly Gly Cys Cys Ser Ser Glu Gly Gly Gly Cys
 52 57 62 67

tgc ctg agc cac cac agg ccc cgc cag tcc ctc cga cgc cga cct cag 295
 Cys Leu Ser His His Arg Pro Arg Gln Ser Leu Arg Arg Arg Pro Gln

68	73	78	83	
agt tcc agc tgc tgt ggc agt ggc agt ggc cag cag tct ggg ggc tcc				343
Ser Ser Ser Cys Cys Gly Ser Gly Ser Gly Gln Gln Ser Gly Gly Ser				
84	89	94	99	
agc tgc tgc cac agc tct ggg ggc tct ggc tgc tgc cac agc tct gga				391
Ser Cys Cys His Ser Ser Gly Gly Ser Gly Cys Cys His Ser Ser Gly				
100	105	110	115	
ggc tgc tgc tga cctggggccat gaggagcan				422
Gly Cys Cys *				
116				

<210> 361
 <211> 1304
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (181) .. (723)

<400> 361	
atttggccct cgaggccaag aattcgggcac gagggcggcg cggacagcgt tcggggctgt	60
gtgcgggcgc ctctggcagg gattggggaa tttttctgta aacacttcta agggcaatac	120
agccaaaaat ggtggcttgc ttctgtttct ctttttttcc ccacacatag cagtaccaat	180
atg aag tgg gta cag ttt tca aac cta cac gtt gat gtt cca aag gat	228
Met Lys Trp Val Gln Phe Ser Asn Leu His Val Asp Val Pro Lys Asp	
1 5 10 15	
ttg acc aaa cct gtg gta aca atc tct gat gaa cca gac ata tta tat	276
Leu Thr Lys Pro Val Val Thr Ile Ser Asp Glu Pro Asp Ile Leu Tyr	
17 22 27 32	
aag cgc ctc tcg gtt ttg gtg aaa ggt cac gat aag gct gta ttg gac	324
Lys Arg Leu Ser Val Leu Val Lys Gly His Asp Lys Ala Val Leu Asp	
33 38 43 48	
agt tat gaa tat ttt gct gtg ctt gct gct aaa gaa ctt ggt atc tct	372
Ser Tyr Glu Tyr Phe Ala Val Leu Ala Ala Lys Glu Leu Gly Ile Ser	
49 54 59 64	
att aaa gta cat gaa cct cca agg aaa ata gag cga ttt act ctt ctc	420
Ile Lys Val His Glu Pro Pro Arg Lys Ile Glu Arg Phe Thr Leu Leu	
65 70 75 80	
caa tca gtg cat att tac aag aag cac aga gtt cag tat gaa atg aga	468
Gln Ser Val His Ile Tyr Lys Lys His Arg Val Gln Tyr Glu Met Arg	
81 86 91 96	

aca ctt tac aga tgt tta gag tta gaa cat cta act gga agc aca gca	516
Thr Leu Tyr Arg Cys Leu Glu Leu Glu His Leu Thr Gly Ser Thr Ala	
97 102 107 112	
gat gtc tac ttg gaa tat att cag cga aac tta cct gaa ggg gtt gcc	564
Asp Val Tyr Leu Glu Tyr Ile Gln Arg Asn Leu Pro Glu Gly Val Ala	
113 118 123 128	
atg gaa gta aca aag ttt tgt ttc ttt att ttt tta gac aca att aga	612
Met Glu Val Thr Lys Phe Cys Phe Phe Ile Phe Leu Asp Thr Ile Arg	
129 134 139 144	
aca gtt acc aga aca cat caa gga gcc aat ctg gga aac act atc aga	660
Thr Val Thr Arg Thr His Gln Gly Ala Asn Leu Gly Asn Thr Ile Arg	
145 150 155 160	
aga aaa aga aga aag caa gtc ata aag cct cag gga ggc cat ttt tgc	708
Arg Lys Arg Arg Lys Gln Val Ile Lys Pro Gln Gly Gly His Phe Cys	
161 166 171 176	
cta aat ttg aaa tga ggggtgggcc gatgagtatg ttttaagtgga gagtgccttc	763
Leu Asn Leu Lys *	
177	
agctgagatg atttgagtct gtcctaactg ctccattgag ttctcgtgcc ctcatcagct	823
gagggcaggg aatggaactt taatggaaga accactttta tctattcttt ttattcattg	883
tttcagttct gatttcagca aacatgagca aaccactttg actgaaagca gaaagagtga	943
aaattctatt ttgttacgct actgggtgttc aattattagt ttgtaccatt ttttaatttat	1003
gtcagttgat gcatctgaaa ataagtgcct ggagtgttcg tacccttatt tttttttaag	1063
attcctagaa ggaatctttg gttaattcag attgagcagt taaagttttt gctatttacc	1123
tttgtgcagg ctggcatatg ctaatttggg ggtggtaacc aaccgatttt atctcatgta	1183
agcattacat tttgaagact gaatatactt cacagcagat caaacacatt tatggcatgc	1243
actgacctct tcttggagcc cagactttat agagttgcct accagggggt actgtaatgg	1303
a	1304

<210> 362
 <211> 414
 <212> DNA
 <213> Homo sapiens

 <220>
 <221> CDS
 <222> (53) .. (370)

<220>
 <221> misc_feature
 <222> (1)...(414)
 <223> n = a,t,c or g

<400> 362
 ggacgtatct gttgctgcgt ctgaacccac tgtttatcga aatcccacca ag atg 55
 Met
 1
 tcc tgc cag cag aac caa cag cag tgc cag ccc cct ccc aag tgt cct 103
 Ser Cys Gln Gln Asn Gln Gln Gln Cys Gln Pro Pro Pro Lys Cys Pro
 2 7 12 17
 atc ccc aag tat ccc cca aaa tgt ccc tca aag tgt gca tcc tca tgc 151
 Ile Pro Lys Tyr Pro Pro Lys Cys Pro Ser Lys Cys Ala Ser Ser Cys
 18 23 28 33
 cca cct cca atc tct tcc tgc tgt ggc tcc agc tct ggg ggc tgc tgt 199
 Pro Pro Pro Ile Ser Ser Cys Cys Gly Ser Ser Ser Gly Gly Cys Cys
 34 39 44 49
 agc tct ggg ggc tgt ggt tgc tgc agc tct gag gga ggt ggc tgc tgc 247
 Ser Ser Gly Gly Cys Gly Cys Cys Ser Ser Glu Gly Gly Gly Cys Cys
 50 55 60 65
 ctg agc cac cac aga cac cat agg tcc cac tgc cac aga ccc aag agc 295
 Leu Ser His His Arg His His Arg Ser His Cys His Arg Pro Lys Ser
 66 71 76 81
 tcc aat tgc tat ggc agt ggc agt ggc cag cag tct ggg ggt tct ggc 343
 Ser Asn Cys Tyr Gly Ser Gly Ser Gly Gln Gln Ser Gly Gly Ser Gly
 82 87 92 97
 tgc tgc tct gga ggg ggc tgt tgc tga cctgg accaggagca gcaccaaagg 395
 Cys Cys Ser Gly Gly Gly Cys Cys *
 98 103
 aattagtggg cgaaggacn 414

<210> 363
 <211> 2254
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (238)..(1278)

<400> 363
 aattccgggt cgacctacgc gtccgaagct ataggctacc cattcagctc ccctgtcaga 60
 gactcaagct ttgagaaaagg ctagcaaaga gcaaggaaaag agagaaaaca acaaagtggc 120

gaggccctca gagtgaagc gtaagggttca gtcagcctgc tgcagctttg cagacctcag 180

ctgggcatct ccagactccc ctgaaggaag agccttcctc acccaaaccc acaaaag 237

atg ctg aaa aag cct ctc tca gct gtg acc tgg ctc tgc att ttc atc 285

Met Leu Lys Lys Pro Leu Ser Ala Val Thr Trp Leu Cys Ile Phe Ile

1 5 10 15

gtg gcc ttt gtc agc cac cca gcg tgg ctg cag aag ctc tct aag cac 333

Val Ala Phe Val Ser His Pro Ala Trp Leu Gln Lys Leu Ser Lys His

17 22 27 32

aag aca cca gca cag cca cag ctc aaa gcg gcc aac tgc tgt gag gag 381

Lys Thr Pro Ala Gln Pro Gln Leu Lys Ala Ala Asn Cys Cys Glu Glu

33 38 43 48

gtg aag gag ctc aag gcc caa gtt gcc aac ctt agc agc ctg ctg agt 429

Val Lys Glu Leu Lys Ala Gln Val Ala Asn Leu Ser Ser Leu Leu Ser

49 54 59 64

gaa ctg aac aag aag cag gag agg gac tgg gtc agc gtg gtc atg cag 477

Glu Leu Asn Lys Lys Gln Glu Arg Asp Trp Val Ser Val Val Met Gln

65 70 75 80

gtg atg gag ctg gag agc aac agc aag cgc atg gag tcg cgg ctc aca 525

Val Met Glu Leu Glu Ser Asn Ser Lys Arg Met Glu Ser Arg Leu Thr

81 86 91 96

gat gct gag agc aag tac tcc gag atg aac aac caa att gac atc atg 573

Asp Ala Glu Ser Lys Tyr Ser Glu Met Asn Asn Gln Ile Asp Ile Met

97 102 107 112

cag ctg cag gca gca cag acg gtc act cag acc tcc gca gat gcc atc 621

Gln Leu Gln Ala Ala Gln Thr Val Thr Gln Thr Ser Ala Asp Ala Ile

113 118 123 128

tac gac tgc tct tcc ctc tac cag aag aac tac cgc atc tct gga gtg 669

Tyr Asp Cys Ser Ser Leu Tyr Gln Lys Asn Tyr Arg Ile Ser Gly Val

129 134 139 144

tat aag ctt cct cct gat gac ttc ctg ggc agc cct gaa ctg gag gtg 717

Tyr Lys Leu Pro Pro Asp Asp Phe Leu Gly Ser Pro Glu Leu Glu Val

145 150 155 160

ttc tgt gac atg gag act tca ggc gga ggc tgg acc atc atc cag aga 765

Phe Cys Asp Met Glu Thr Ser Gly Gly Gly Trp Thr Ile Ile Gln Arg

161 166 171 176

cga aaa agt ggc ctt gtc tcc ttc tac cgg gac tgg aag cag tac aag 813

Arg Lys Ser Gly Leu Val Ser Phe Tyr Arg Asp Trp Lys Gln Tyr Lys

177 182 187 192

cag ggc ttt ggc agc atc cgt ggg gac ttc tgg ctg ggg aac gaa cac 861

Gln Gly Phe Gly Ser Ile Arg Gly Asp Phe Trp Leu Gly Asn Glu His

193 198 203 208

atc cac cgg ctc tcc aga cag cca acc cgg ctg cgt gta gag atg gag 909

Ile His Arg Leu Ser Arg Gln Pro Thr Arg Leu Arg Val Glu Met Glu

209	214	219	224	
gac tgg gag ggc aac ctg cgc tac gct gag tat agc cac ttt gtt ttg				957
Asp Trp Glu Gly Asn Leu Arg Tyr Ala Glu Tyr Ser His Phe Val Leu				
225	230	235	240	
ggc aat gaa ctc aac agc tat cgc ctc ttc ctg ggg aac tac act ggc				1005
Gly Asn Glu Leu Asn Ser Tyr Arg Leu Phe Leu Gly Asn Tyr Thr Gly				
241	246	251	256	
aat gtg ggg aac gac gcc ctc cag tat cat aac aac aca gcc ttc agc				1053
Asn Val Gly Asn Asp Ala Leu Gln Tyr His Asn Asn Thr Ala Phe Ser				
257	262	267	272	
acc aag gac aag gac aat gac aac tgc ttg gac aag tgt gca cag ctc				1101
Thr Lys Asp Lys Asp Asn Asp Asn Cys Leu Asp Lys Cys Ala Gln Leu				
273	278	283	288	
cgc aaa ggt ggc tac tgg tac aac tgc tgc aca gac tcc aac ctc aat				1149
Arg Lys Gly Gly Tyr Trp Tyr Asn Cys Cys Thr Asp Ser Asn Leu Asn				
289	294	299	304	
gga gtg tac tac cgc ctg ggt gag cac aat aag cac ctg gat ggc atc				1197
Gly Val Tyr Tyr Arg Leu Gly Glu His Asn Lys His Leu Asp Gly Ile				
305	310	315	320	
acc tgg tat ggc tgg cat gga tct acc tac tcc ctc aaa cgg gtg gag				1245
Thr Trp Tyr Gly Trp His Gly Ser Thr Tyr Ser Leu Lys Arg Val Glu				
321	326	331	336	
atg aaa atc cgc cca gaa gac ttc aag cct taa aaggaggc tgccgtggag				1296
Met Lys Ile Arg Pro Glu Asp Phe Lys Pro *				
337	342	347		
cacggataca gaaactgaga cacgtggaga ctggatgagg gcagatgagg acaggaagag				1356
agtgttagaa agggtaggac tgagaaacag cctataatct ccaaagaaag aataagtctc				1416
caaggagcac aaaaaaatca tatgtacca ggaatgttaca gtaaacagga tgaactatct				1476
aaaccactg ggtcctgcc catccttctc aaggtggtag actgagtggg gtctctctgc				1536
ccaagatccc tgacatagca gtagcttgtc ttttccacat gatttgtctg tgaaagaaaa				1596
taattttgag atcgttttat ctatcttctc tacggcttag gctatgtgag ggcaaaacac				1656
aatcccttt gctaaaaaga accatattat ttgattctc aaaggatagg cttttgagt				1716
ttagagaaag gagtgaagga ggcaggtggg aaatggtatt tctatcttta aatccagtga				1776
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 Asp Ile Asn Cys Gly Thr Asp Leu Met Phe Tyr Ile Glu Met Asp Pro
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 Pro Ala Leu Pro Pro Lys Pro Pro Lys Pro Thr Thr Val Ala Asn Asn
 35 40 45 50

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 Gly Met Asn Asn Asn Met Ser Leu Gln Asp Ala Glu Trp Tyr Trp Gly
 51 56 61 66

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 67 72 77 82

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 Gly Thr Phe Leu Val Arg Asp Ala Ser Thr Lys Met His Gly Asp Tyr
 83 88 93 98

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 Thr Leu Thr Leu Arg Lys Gly Gly Asn Asn Lys Leu Ile Lys Ile Phe
 99 104 109 114

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Val Val Glu Leu Ile Asn His Tyr Arg Asn Glu Ser Leu Ala Gln Tyr	
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Arg Leu Tyr Glu Glu Tyr Thr Arg Thr Ser Gln Glu Ile Gln Met Lys	
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Lys Arg Met Asn Ser Ile Lys Pro Asp Leu Ile Gln Leu Arg Lys Thr	
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Thr Glu Trp Ala Gln Leu Leu Glu Ser Gln Gln Lys Tyr His Asp Thr	
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Glu Leu Gln Lys Trp Arg Glu Ile Ile Lys Ser Ser Val Met Leu Leu	
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Asp Gln Met Lys Asp Ser Leu Ile Asn Leu Gln Asn Gly Ile Arg Ser	
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Arg Asp Tyr Thr Ser Glu Ser Glu Glu Lys Arg Asn Arg Tyr His *	
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Met Lys Gly

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Cys Ser Pro Ile Leu Arg Lys Arg Ser Arg Ser Pro Thr Pro Gln Asn	
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Gln Ser Gly Arg Ser Gly Gly Lys Asn Ser Lys Lys Ser Gln Ser Trp	
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Tyr Asn Val Leu Ser Pro Thr Tyr Lys Gln Arg Asn Glu Asp Phe Arg	
84 89 94 99	
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Lys Leu Phe Lys Gln Leu Pro Asp Thr Glu Arg Leu Ile Val Asp Tyr	
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Ser Cys Ala Leu Gln Arg Asp Ile Leu Leu Gln Gly Arg Leu Tyr Leu	
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ctg ctg aca gtc cgt ttg aaa gac atc tgt tcc atg act aaa gaa aaa	835
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Lys Cys Glu Ala Arg Ser Ala Leu Thr Lys Pro Lys Asn Asn His Asn						
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Cys Lys Lys Val Ser Asn Glu Glu Lys Pro Lys Val Ala Ile Gly Glu						
57		62		67		72
gag tgc agg gca gat gaa caa gcc ttc ttg gtg gca ctt tat aaa tac						592
Glu Cys Arg Ala Asp Glu Gln Ala Phe Leu Val Ala Leu Tyr Lys Tyr						
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atg aaa gaa agg aaa acg ccg ata gaa cga ata ccc tat tta ggt ttt						640
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Gly Tyr Glu Thr Ile Thr Ala Arg Arg Gln Trp Lys His Ile Tyr Asp						
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Glu Leu Gly Gly Asn Pro Gly Ser Thr Ser Ala Ala Thr Cys Thr Arg						
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Ser Ser Gln Glu Asn Glu Asn Lys Thr Lys Val Ser Gly Thr Lys Arg						
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 217 222 227 232

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 ttccaacaca gatgcccagg cacctccaga tcattcactt cgcacgtggg ccttgtgaag 3441
 ggatttgtga atatccagga agaacttaga ggacccatc tgagttcgga tggtcaggaa 3501
 acaatctggg caaaaaagag gcaggcattt caaaggaagg ggcaaggaag actggcaaac 3561

agatggcaag g gatgcccct ctttttcata aaactctcca aggttcaatc aatgcaatgt 3621
 atagtgaac ttcaatagat ctttcatttt gacactatta aacaatccag agaagtaaac 3681
 actgtt 3687

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 <211> 1925
 <212> DNA
 <213> Homo sapiens
 <220>
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 <222> (130) .. (1497)

<400> 367
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 aagggaact aaaggatcaa gaaaggcca gcacagcaga agatcagctg gatctagctc 120
 ctgcaggag atg tgt aca aag aca atc cca gtc ctc tgg gga tgt ttc 168
 Met Cys Thr Lys Thr Ile Pro Val Leu Trp Gly Cys Phe
 1 5 10
 ctc ctg tgg aat ctc tat gtc tca tcc tct cag acc att tac cct gga 216
 Leu Leu Trp Asn Leu Tyr Val Ser Ser Ser Gln Thr Ile Tyr Pro Gly
 14 19 24 29
 atc aag gca agg att act cag agg gca ctt gac tat ggt gtt caa gct 264
 Ile Lys Ala Arg Ile Thr Gln Arg Ala Leu Asp Tyr Gly Val Gln Ala
 30 35 40 45
 gga atg aag atg att gag caa atg cta aaa gaa aag aaa ctc cca gat 312
 Gly Met Lys Met Ile Glu Gln Met Leu Lys Glu Lys Lys Leu Pro Asp
 46 51 56 61
 tta agc ggt tct gag tct ctt gaa ttt cta aaa gtt gat tat gta aac 360
 Leu Ser Gly Ser Glu Ser Leu Glu Phe Leu Lys Val Asp Tyr Val Asn
 62 67 72 77
 tac aat ttt tca aat ata aaa atc agt gcc ttt tca ttt cca aat acc 408
 Tyr Asn Phe Ser Asn Ile Lys Ile Ser Ala Phe Ser Phe Pro Asn Thr
 78 83 88 93
 tca ttg gct ttt gtg cct gga gtg gga atc aaa gcg cta acc aac cat 456
 Ser Leu Ala Phe Val Pro Gly Val Gly Ile Lys Ala Leu Thr Asn His
 94 99 104 109
 ggc act gcc aac atc agc aca gac tgg ggg ttc gag tct cca ctt ttt 504
 Gly Thr Ala Asn Ile Ser Thr Asp Trp Gly Phe Glu Ser Pro Leu Phe
 110 115 120 125
 gtt ctg tat aac tcc ttt gct gag ccc atg gag aaa ccc att tta aag 552
 Val Leu Tyr Asn Ser Phe Ala Glu Pro Met Glu Lys Pro Ile Leu Lys

126	131	136	141	
aac tta aat gaa atg	ctc tgt ccc att att	gca agt gaa gtc aaa gcg		600
Asn Leu Asn Glu Met	Leu Cys Pro Ile Ile	Ala Ser Glu Val Lys Ala		
142	147	152	157	
cta aat gcc aac ctc	agc aca ctg gag gtt	tta acc aag att gac aac		648
Leu Asn Ala Asn Leu	Ser Thr Leu Glu Val	Leu Thr Lys Ile Asp Asn		
158	163	168	173	
tac act ctg ctg gat	tac tcc cta atc agt	tct cca gaa att act gag		696
Tyr Thr Leu Leu Asp	Tyr Ser Leu Ile Ser	Ser Pro Glu Ile Thr Glu		
174	179	184	189	
aac tac ctt gac ctg	aac ttg aag ggt gta	tac cca ctg gaa aac		744
Asn Tyr Leu Asp Leu	Asn Leu Lys Gly Val	Phe Tyr Pro Leu Glu Asn		
190	195	200	205	
ctc acc gac ccc ccc	ttc tca cca gtt cct	ttt gtg ctc cca gaa cgc		792
Leu Thr Asp Pro Pro	Phe Ser Pro Val Pro	Phe Val Leu Pro Glu Arg		
206	211	216	221	
agc aac tcc atg ctc	tac att gga atc gcc	gag tat ttc ttt aaa tct		840
Ser Asn Ser Met Leu	Tyr Ile Gly Ile Ala	Glu Tyr Phe Phe Lys Ser		
222	227	232	237	
gcg tcc ttt gct cat	ttc aca gct ggg gtt	ttc aat gtc act ctc tcc		888
Ala Ser Phe Ala His	Phe Thr Ala Gly Val	Phe Asn Val Thr Leu Ser		
238	243	248	253	
acc gaa gag att tcc	aac cat ttt gtt caa	aac tct caa ggc ctt ggc		936
Thr Glu Glu Ile Ser	Asn His Phe Val Gln	Asn Ser Gln Gly Leu Gly		
254	259	264	269	
aac gtg ctc tcc cgg	att gca gag atc tac	atc ttg tcc cag ccc ttc		984
Asn Val Leu Ser Arg	Ile Ala Glu Ile Tyr	Ile Leu Ser Gln Pro Phe		
270	275	280	285	
atg gtg agg atc atg	gcc aca gag cct ccc	ata atc aat cta caa cca		1032
Met Val Arg Ile Met	Ala Thr Glu Pro Pro	Ile Ile Asn Leu Gln Pro		
286	291	296	301	
ggc aat ttc acc ctg	gac atc cct gcc tcc	atc atg atg ctc acc caa		1080
Gly Asn Phe Thr Leu	Asp Ile Pro Ala Ser	Ile Met Met Leu Thr Gln		
302	307	312	317	
ccc aag aac tcc aca	gtt gaa acc atc gtt	tcc atg gac ttc gtt gct		1128
Pro Lys Asn Ser Thr	Val Glu Thr Ile Val	Ser Met Asp Phe Val Ala		
318	323	328	333	
agt acc agt gtt ggc	ctg gtt att ttg gga	caa aga ctg gtc tgc tcc		1176
Ser Thr Ser Val Gly	Leu Val Ile Leu Gly	Gln Arg Leu Val Cys Ser		
334	339	344	349	
ttg tct ctg aac aga	ttc cgc ctt gct ttg	cca gag tcc aat cgc agc		1224
Leu Ser Leu Asn Arg	Phe Arg Leu Ala Leu	Pro Glu Ser Asn Arg Ser		
350	355	360	365	

aac att gag gtc ttg agg ttt gaa aat att cta tcg tcc att ctt cac 1272
 Asn Ile Glu Val Leu Arg Phe Glu Asn Ile Leu Ser Ser Ile Leu His
 366 371 376 381
 ttt gga gtc ctc cca ctg gcc aat gca aaa ttg cag caa gga ttt cct 1320
 Phe Gly Val Leu Pro Leu Ala Asn Ala Lys Leu Gln Gln Gly Phe Pro
 382 387 392 397
 ctg ccc aat cca cac aaa ttc tta ttc gtc aat tca gat att gaa gtt 1368
 Leu Pro Asn Pro His Lys Phe Leu Phe Val Asn Ser Asp Ile Glu Val
 398 403 408 413
 ctt gag ggt ttc ctt ttg att tcc acc gac ctg aag tat gaa aca tcc 1416
 Leu Glu Gly Phe Leu Leu Ile Ser Thr Asp Leu Lys Tyr Glu Thr Ser
 414 419 424 429
 tca aag cag cag cca agt ttc cac gta tgg gaa ggt ctg aac ctg ata 1464
 Ser Lys Gln Gln Pro Ser Phe His Val Trp Glu Gly Leu Asn Leu Ile
 430 435 440 445
 agc aga cag tgg agg ggg aag tca gcc cct tga ttgccggt ttgcaattca 1515
 Ser Arg Gln Trp Arg Gly Lys Ser Ala Pro *
 446 451 456
 cccaggaag taaatggtcc ttaatcctac aactactgta aaccagaaag ggaaagacag 1575
 tacacactgg aattgtaaag cccttgtaga ttgcttaggc agaaagtgtt ctttcttaag 1635
 ccttcaggaa ccagaaataa ggcagactct gttaaaggga taaatagagg tgtctgaatg 1695
 tgagtgtatg catgctgcgt gtgtctgtgt ttatgtttgt ttgtttgttt ggggcaagaa 1755
 agattctagg acaagagcta ggcattgtact tctgaccagg tgggtaagca actctaagtc 1815
 tgtatttgta ttggtcattc tcagtggaaa tcccttaggc cctctagtgg ttttccccta 1875
 cctgcatatt ggttttcatg ttttatattc actgttacta ttttctgtgg 1925

<210> 368
 <211> 1264
 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (611)..(904)

<400> 368
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 catgcctgta atctcagcac tttgggaggt cggggcagga ggacttgagg cctagagttt 120
 gagaccagcc tgggcaacat agcgagcacc ccattctccag aaaaaattta aaaattggct 180

ggagcgtagtg gctcatgcct gtaatcccag cactttggga ggccgagggg gatggatcat	240
ttgagggtcag gagtttgaga ccagcctggc caacatggtg aaaccocatc tctactaaaa	300
atacaaaaat tagccgggca tggtggtggg cacctgtaat cctagctact tgggaggctg	360
aggcaggaga atcgcttgaa cccaggaggc ggtggttgta gtgagctagg atcatgccat	420
tgcagtccag cctggacagc aaagctagac tccatctcaa aaaaaaaaaa aaaaagtcga	480
ccggccgcga atttagtagt agtaggcggc cgctctagag gatccaagct tacgtacgg	540
tgcattgcgac gtcattagctc ttctatatgt tcacctaaat tcaattcact ggctgtaggt	600
ctacaacatc atg act gcc aaa aca acc aag gta ccc aat gcc tgt tta Met Thr Gly Lys Thr Thr Lys Val Pro Asn Ala Cys Leu	649
1 5 10	
ttc acc atc aac aaa gaa gac cac aca ctg gga aac atc att aaa tca	697
Phe Thr Ile Asn Lys Glu Asp His Thr Leu Gly Asn Ile Ile Lys Ser	
14 19 24 29	
caa ctc cta aaa gac ccg caa gtg cta ttt gct ggc tac aaa gtc ccc	745
Gln Leu Leu Lys Asp Pro Gln Val Leu Phe Ala Gly Tyr Lys Val Pro	
30 35 40 45	
cac ccc ttg gag cac aag atc atc atc cga gtg cag acc acg ccg gac	793
His Pro Leu Glu His Lys Ile Ile Ile Arg Val Gln Thr Thr Pro Asp	
46 51 56 61	
tac agc ccc cag gaa gcc ttt acc aac gcc atc acc gac ctc atc agc	841
Tyr Ser Pro Gln Glu Ala Phe Thr Asn Ala Ile Thr Asp Leu Ile Ser	
62 67 72 77	
gag ctg tcc ctg ctg gag gag cgc ttc cgg acg tgc ctg ctt ccc ctt	889
Glu Leu Ser Leu Leu Glu Glu Arg Phe Arg Thr Cys Leu Leu Pro Leu	
78 83 88 93	
cgc ctt ctg ccg tga ttgtcagttt cctgaggcct cccagccac gcttcctgta	944
Arg Leu Leu Pro *	
94	
cagcctgcag aactgccgga catggtggct cacacctgga atcccagaac ttcaggaggc	1004
tgagggtggga ggatcacttg agcccaggag tttgagacca gcctgggcaa cacgctgccc	1064
cagagcacat cagctatgtg cccagctct caaacgacac cttggcgggg aggctcacc	1124
tgtccacctt cacgctggag cagcctttag gccagttcag cagccacaac atctctgact	1184
tggataccat ctggctggtg gtggccctca gcaacgccac gccgagcctc gtgccgaatt	1244
cttggcctcg agggccaaat	1264

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<220>  
<221> CDS  
<222> (262) .. (594)
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1246

<210> 370
 <211> 1902
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (981)..(1880)

<400> 370
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 taagggcaaa gtgagttaat gtgtagacaa aggcgaggga caagagagag ttaacatcta 120
 gacagtggaa aaagccatgg tgtgtggttt ctgggaacca ccaacacttg caggttttagc 180
 tttttcccag ggttgactac aagaaagaaa accatgtttt tgcaagatta aaatgtgggt 240
 gagtgtgcct aaattaacca tccccatttt tatcatattt ccaccatcac ttcagggttt 300
 taagagtcag tgctcacctg ggccggagctg gtagtacatt ttgcttctta gaaagctaag 360
 tcctgggttc cgtctgattt taggttccag gaacttcctg agaacacccg atcgagagg 420
 gtaattttct ggagtttggt ttgcagggat agctgggagt atggccaccc tgctccacga 480
 tgcggtaatg aatccagcag aagtggtgaa gcagcgcttg cagatgtaca actcgagca 540
 ccggtcagca atcagctgca tccggacggt gtggaggacc gagggggttg gggccttcta 600
 ccggagctac accacgcagc tgaccatgaa catccccctc cagtccatcc acttcatcac 660
 ctatgagttc ctgcaggagc aggtcaaccc ccaccggacc tacaaccgcg attcccat 720
 catctcaggc gggctggccg gggccctcgc cgcgcccgcc acgaccccc tggacgtctg 780
 taaaaccctt ctgaacactc aggagaacgt ggccctctcg ctggccaaca tcagcgccg 840
 gctggtggtg cctatgggcc ctctgctccc caatgcctta gagagaggag gggacggcac 900
 ggccgctcac cggaaggctg tgtgcgggga catccgagag gtctgggagc tggaccggct 960
 gctgccttgt gacatccggg atg gcg cct tca tta cta tgc cct ttc act 1010
 Met Ala Pro Ser Leu Leu Cys Pro Phe Thr
 1 5
 gct atg cac aaa acc gtg ggg agg gcc tcc tgc gcc ccg ccg agc tgg 1058
 Ala Met His Lys Thr Val Gly Arg Ala Ser Cys Ala Pro Pro Ser Trp
 11 16 21 26
 cgg atg gag ctg cgc agc ggg agc gtg ggc agc cag gcg gtg gcg cgg 1106
 Arg Met Glu Leu Arg Ser Gly Ser Val Gly Ser Gln Ala Val Ala Arg
 27 32 37 42
 agg atg gat ggg gac agc cga gat ggc ggc ggc ggc aag gac gcc acc 1154
 Arg Met Asp Gly Asp Ser Arg Asp Gly Gly Gly Gly Lys Asp Ala Thr

43	48	53	58	
ggg tcg gag gac tac gag aac ctg ccg act agc gcc tcc gtg tcc acc				1202
Gly Ser Glu Asp Tyr Glu Asn Leu Pro Thr Ser Ala Ser Val Ser Thr				
59	64	69	74	
cac atg aca gca gga gcg atg gcc ggg atc ctg gag cac tcg gtc atg				1250
His Met Thr Ala Gly Ala Met Ala Gly Ile Leu Glu His Ser Val Met				
75	80	85	90	
tac ccg gtg gac tcg gtg aag aca cga atg cag agt ttg agt cca gat				1298
Tyr Pro Val Asp Ser Val Lys Thr Arg Met Gln Ser Leu Ser Pro Asp				
91	96	101	106	
ccc aaa gcc cag tac aca agt gtc tac gga gcc ctc aag aaa atc atg				1346
Pro Lys Ala Gln Tyr Thr Ser Val Tyr Gly Ala Leu Lys Lys Ile Met				
107	112	117	122	
cgg acc gaa ggc ttc tgg agg ccc ttg cga ggc gtc aac gtc atg atc				1394
Arg Thr Glu Gly Phe Trp Arg Pro Leu Arg Gly Val Asn Val Met Ile				
123	128	133	138	
atg ggt gca ggg cca gcc cat gcc atg tat ttt gcc tgc tat gaa aac				1442
Met Gly Ala Gly Pro Ala His Ala Met Tyr Phe Ala Cys Tyr Glu Asn				
139	144	149	154	
atg aaa agg act tta aat gac gtt ttc cac cac caa gga aac agc cac				1490
Met Lys Arg Thr Leu Asn Asp Val Phe His His Gln Gly Asn Ser His				
155	160	165	170	
cta gcc aac ggg ata gct ggg agt atg gcc acc ctg ctc cac gat gcg				1538
Leu Ala Asn Gly Ile Ala Gly Ser Met Ala Thr Leu Leu His Asp Ala				
171	176	181	186	
gta atg aat cca gca gaa gtg gtg aag cag cgc ttg cag atg tac aac				1586
Val Met Asn Pro Ala Glu Val Val Lys Gln Arg Leu Gln Met Tyr Asn				
187	192	197	202	
tcg cag cac cgg tca gca atc agc tgc atc cgg acg gtg tgg agg acc				1634
Ser Gln His Arg Ser Ala Ile Ser Cys Ile Arg Thr Val Trp Arg Thr				
203	208	213	218	
gag ggg ttg ggg gcc ttc tac cgg agc tac acc acg cag ctg acc atg				1682
Glu Gly Leu Gly Ala Phe Tyr Arg Ser Tyr Thr Thr Gln Leu Thr Met				
219	224	229	234	
aac atc ccc ttc cag tcc atc cac ttc atc acc tat gag ttc ctg cag				1730
Asn Ile Pro Phe Gln Ser Ile His Phe Ile Thr Tyr Glu Phe Leu Gln				
235	240	245	250	
gag cag gtc aac ccc cac cgg acc tac aac ccg cag tcc cac atc atc				1778
Glu Gln Val Asn Pro His Arg Thr Tyr Asn Pro Gln Ser His Ile Ile				
251	256	261	266	
tca ggc ggg ctg gcc ggg gcc ctc gcc gcg gcc gcg aat tcg gat cct				1826
Ser Gly Gly Leu Ala Gly Ala Leu Ala Ala Ala Ala Asn Ser Asp Pro				
267	272	277	282	

cga gag atc tct ttt ttt ggg ttt ggt ggg gta tct tca tca tcg aat 1874
 Arg Glu Ile Ser Phe Phe Gly Phe Gly Gly Val Ser Ser Ser Ser Asn
 283 288 293 298

aga tag ttatatgcac agccattcta tg 1902
 Arg *
 299

<210> 371
 <211> 733
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (217)..(333)

<400> 371
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 aggagtgtta tcttttgagaa ctttttgagg gctgacgaaa gagaaagaga actcaaaagg 120
 gagaataaga taaagagaaa atgaggctag aaaaacatgc aggagctaga aaggtaaagg 180
 aaccctgcc ccttgacctt ccttccctct accctc atg gtc ctc tta ctg tcc 234
 Met Val Leu Leu Leu Ser
 1

ttg act ttc ttc tct gct tta aca ttc cat tct att tgt caa ctg cgt 282
 Leu Thr Phe Phe Ser Ala Leu Thr Phe His Ser Ile Cys Gln Leu Arg
 7 12 17 22

aac aca ggc gta gaa gtg gac att gtt ttc cag aga gtc tcc ttt tta 330
 Asn Thr Gly Val Glu Val Asp Ile Val Phe Gln Arg Val Ser Phe Leu
 23 28 33 38

tag tttc ttcctcaacc ttaaaatgtc tgtccttttg gcacgttgtg aaggagaaca 387
 *
 39

ctaactgcc taagattgga ggtgacgata tctctgtgat gctgggggag aaatcacagg 447

ggcgaaacaa aaactttagg ggtcattgac caaagggggc ctttctttat aaaaaaaggg 507

aattcctggc ttttctttcc catctaattc tcaggagtac cttgaatggc tccttgaaag 567

agagggcaca ggaacctca caccatctct cctttgcttt attcgggatg gaagctttcc 627

aataattact taactgggog ggtgtggcct cttcatgctc tatggagcat ccccttgggg 687

aacagcttaa aaataattag ggagaccaga ccaaggggaag gggggg 733

<210> 372
 <211> 608
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (49)..(468)

<400> 372
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 Met Ser Ser
 1

tta ccc gtg cca tac aaa ctg cct gtg tct ttg tct gtt ggt tcc tgc 105
 Leu Pro Val Pro Tyr Lys Leu Pro Val Ser Leu Ser Val Gly Ser Cys
 4 9 14 19

gtg ata atc aaa ggg aca cca atc cac tct ttt atc aatgac cca cag 153
 Val Ile Ile Lys Gly Thr Pro Ile His Ser Phe Ile Asn Asp Pro Gln
 20 25 30 35

ctg cag gtg gat ttc tac act gac atg gat gag gat tca gat att gcc 201
 Leu Gln Val Asp Phe Tyr Thr Asp Met Asp Glu Asp Ser Asp Ile Ala
 36 41 46 51

ttc cgt ttc cga gtg cac ttt ggc aat cat gtg gtc atg aac agg cgt 249
 Phe Arg Phe Arg Val His Phe Gly Asn His Val Val Met Asn Arg Arg
 52 57 62 67

gag ttt ggg ata tgg atg ttg gag gag aca aca gac tac gtg ccc ttt 297
 Glu Phe Gly Ile Trp Met Leu Glu Glu Thr Thr Asp Tyr Val Pro Phe
 68 73 78 83

gag gat ggc aaa caa ttt gag ctg tgc atc tac gta cat tac aat gag 345
 Glu Asp Gly Lys Gln Phe Glu Leu Cys Ile Tyr Val His Tyr Asn Glu
 84 89 94 99

tat gag ata aag gtc aat ggc ata cgc att tac ggc ttt gtc cat cga 393
 Tyr Glu Ile Lys Val Asn Gly Ile Arg Ile Tyr Gly Phe Val His Arg
 100 105 110 115

atc ccg cca tca ttt gtg aag atg gtg caa gtg tcg aga gat atc tcc 441
 Ile Pro Pro Ser Phe Val Lys Met Val Gln Val Ser Arg Asp Ile Ser
 116 121 126 131

ctg acc tca gtg tgt gtc tgc aat tga gggag atgatcacac tcttcattgt 493
 Leu Thr Ser Val Cys Val Cys Asn *
 132 137

tgaggaatcc ctctttctac ctgaccatgg gattcccaga acctgctaac agaataatcc 553

ctgctcacat tttcccctac accttgtcat taaaacagca cgaaaactca aaaaa 608

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<220>  
<221> CDS  
<222> (40)..(1179)
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1251

cct gcc atc gtg cag atg ctg ctg gtg ctg cag ggg gta cat gag tcc	582
Pro Ala Ile Val Gln Met Leu Leu Val Leu Gln Gly Val His Glu Ser	
166 171 176 181	
agg ggc gtg act gag gac tac ctg cgc ctg gag acg ctg gtc cag aag	630
Arg Gly Val Thr Glu Asp Tyr Leu Arg Leu Glu Thr Leu Val Gln Lys	
182 187 192 197	
gtg gtg tcg cca tac ctg ggc acc tac ggc ctc cac tcc agc gag ggg	678
Val Val Ser Pro Tyr Leu Gly Thr Tyr Gly Leu His Ser Ser Glu Gly	
198 203 208 213	
ccc ttc acc cat tcc tgc atc ctg gaa aag cgc ctc ctc cgc cgc tcc	726
Pro Phe Thr His Ser Cys Ile Leu Glu Lys Arg Leu Leu Arg Arg Ser	
214 219 224 229	
cgc tcg ggg gac gtg ctg gcc aag aac cct gtg gtg cgc tcc aag agc	774
Arg Ser Gly Asp Val Leu Ala Lys Asn Pro Val Val Arg Ser Lys Ser	
230 235 240 245	
tac aac acg cct ctg ctg aac ccc gtg cag gag cac gag gcg gag ggc	822
Tyr Asn Thr Pro Leu Leu Asn Pro Val Gln Glu His Glu Ala Glu Gly	
246 251 256 261	
gcg gcg gcc ggc ggt acc agc atc cgc agg cac tct gtg tcg gag atg	870
Ala Ala Ala Gly Gly Thr Ser Ile Arg Arg His Ser Val Ser Glu Met	
262 267 272 277	
acg tcc tgc ccc gag cct cag ggc ttc tcc gac ccg ccc ggc cag ggc	918
Thr Ser Cys Pro Glu Pro Gln Gly Phe Ser Asp Pro Pro Gly Gln Gly	
278 283 288 293	
ccc acc ggg acc ttc agg tcc tcc ccg gcg ccc cac tca ggg ccc tgc	966
Pro Thr Gly Thr Phe Arg Ser Ser Pro Ala Pro His Ser Gly Pro Cys	
294 299 304 309	
ccc agc aga ctg tac ccc acg acc cag ccc cct gag cag ggc ttg gat	1014
Pro Ser Arg Leu Tyr Pro Thr Thr Gln Pro Pro Glu Gln Gly Leu Asp	
310 315 320 325	
ccc acc cgc agc tcc ctg ccc cgc tcc agc ccg gag aac ctg gtg gac	1062
Pro Thr Arg Ser Ser Leu Pro Arg Ser Ser Pro Glu Asn Leu Val Asp	
326 331 336 341	
cag atc ctg gag tcc gtg gac tcg gat tct gaa ggg att ttc att gac	1110
Gln Ile Leu Glu Ser Val Asp Ser Asp Ser Glu Gly Ile Phe Ile Asp	
342 347 352 357	
ttt ggc cgg ggc cgg ggc tct ggc atg tcc gac ttg gag ggc tct ggg	1158
Phe Gly Arg Gly Arg Gly Ser Gly Met Ser Asp Leu Glu Gly Ser Gly	
358 363 368 373	
ggc cgg cag agt gtc gtg tga gg cctcacagct ggccttgagt ttttactgac	1211
Gly Arg Gln Ser Val Val *	
374 379	
acgtccctgt gtgcgggggt gtccatgtgg cgtgtgtgtg agtgagactt ttttactgag	1271

tcccgccccg ccagccctat cggcctcgtc actggccttg gtcactttgt atttctgtct 1331
 tggttgaaaa taccatcagc cttccttgct cggcccaggt ctgtttcagg catctgagtc 1391
 ggcgtttacc cagggggccgg gccagagacg ggggtcggcc gtcgctccc acgctcctcc 1451
 tgccccagcc ctctggtgtc cacacctgcc cacagagaat gtaaaccag tgggctctgc 1511
 ccacgccggg ccccaaagt accagactcc agcacacctg tctcctctg cctgggggtgg 1571
 ccatggggat ggaaggggt ggaataaac ctgtcaacct ggaaaaaaaa aaaa 1625

<210> 374
 <211> 1116
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (163)..(789)

<400> 374
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 ctaaagggaa taagcttgcg gccgccgca gtctggtatc ctgagcttcg tgagttgagc 120
 gctgctgctc cgcggtggag tcaccgcacc gctcccgga tc atg gtg ttc tac 174
 Met Val Phe Tyr
 1
 ttc acc agc agc agc gtt aat tca tct gcc tac act att tac atg gga 222
 Phe Thr Ser Ser Ser Val Asn Ser Ser Ala Tyr Thr Ile Tyr Met Gly
 5 10 15 20
 aaa gat aaa tat gaa aat gaa gat ctg atc aag cat ggc tgg cct gaa 270
 Lys Asp Lys Tyr Glu Asn Glu Asp Leu Ile Lys His Gly Trp Pro Glu
 21 26 31 36
 gat atc tgg ttt cat gtg gac aaa ctc tct tcg gct cat gta tac ctt 318
 Asp Ile Trp Phe His Val Asp Lys Leu Ser Ser Ala His Val Tyr Leu
 37 42 47 52
 cga tta cat aag gga gag aat ata gaa gac atc cca aag gaa gtg ctg 366
 Arg Leu His Lys Gly Glu Asn Ile Glu Asp Ile Pro Lys Glu Val Leu
 53 58 63 68
 atg gac tgt gcc cac ctt gtg aag gcc aat agc att caa ggc tgc aag 414
 Met Asp Cys Ala His Leu Val Lys Ala Asn Ser Ile Gln Gly Cys Lys
 69 74 79 84
 atg aac aac gtt aat gtg gta tat acg ccg tgg tct aac ctg aag aaa 462
 Met Asn Asn Val Asn Val Val Tyr Thr Pro Trp Ser Asn Leu Lys Lys
 85 90 95 100

aca gct gac atg gat	gtg ggg cag ata ggc ttt cac agg cag aag gat	510
Thr Ala Asp Met Asp	Val Gly Gln Ile Gly Phe His Arg Gln Lys Asp	
101	106 111 116	
gta aaa att gtg aca	gtg gag aag aaa gta aat gag atc ctg aac cga	558
Val Lys Ile Val Thr	Val Glu Lys Lys Val Asn Glu Ile Leu Asn Arg	
117	122 127 132	
tta gaa aag acc aaa	gtc gag cgg ttc tca gac cta gca gca gag aaa	606
Leu Glu Lys Thr Lys	Val Glu Arg Phe Ser Asp Leu Ala Ala Glu Lys	
133	138 143 148	
gaa tgc aga gat cgt	gaa gag agg aat gag aaa aaa gcc caa att cag	654
Glu Cys Arg Asp Arg	Glu Glu Arg Asn Glu Lys Lys Ala Gln Ile Gln	
149	154 159 164	
gaa atg aaa aag aga	gaa aaa gaa gaa atg aag aag aag agg gaa atg	702
Glu Met Lys Lys Arg	Glu Lys Glu Glu Met Lys Lys Lys Arg Glu Met	
165	170 175 180	
gat gaa ctt agg agc	tat tca tca cta atg aaa gtt gaa aat atg tct	750
Asp Glu Leu Arg Ser	Tyr Ser Ser Leu Met Lys Val Glu Asn Met Ser	
181	186 191 196	
tca aat cag gat ggc	aat gat tca gat gaa ttc atg taa aaggagaaaa	799
Ser Asn Gln Asp Gly	Asn Asp Ser Asp Glu Phe Met *	
197	202 207	
ggagaaaagg acctttgaaa	gatgtgaatg tagagacaat tgcagacctt ttggtttcat	859
ctgtgttctg aaatataaaa	tacaaccaa attctacctt catcctaccc agaaattatt	919
gattttcaag ttttaaaaaa	attgtacctt ttttgctgac agaaaaggat cagatatgta	979
taaaatagtt gaacttgaca	gcatataact taaagtgaaa atgtttttgc cagaacatgt	1039
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gctgctgctc cgcggtggag tcaccgcacc gctccccgga tc atg gtg ttc tac 174
 Met Val Phe Tyr
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ttc acc agc agc agc gtt aat tca tct gcc tac act att tac atg gga 222
 Phe Thr Ser Ser Ser Val Asn Ser Ser Ala Tyr Thr Ile Tyr Met Gly
 5 10 15 20

aaa gat aaa tat gaa aat gaa gat ctg atc aag cat ggc tgg cct gaa 270
 Lys Asp Lys Tyr Glu Asn Glu Asp Leu Ile Lys His Gly Trp Pro Glu
 21 26 31 36

gat atc tgg ttt cat gtg gac aaa ctc tct tcg gct cat gta tac ctt 318
 Asp Ile Trp Phe His Val Asp Lys Leu Ser Ser Ala His Val Tyr Leu
 37 42 47 52

cga tta cat aag gga gag aat ata gaa gac atc cca aag gaa gtg ctg 366
 Arg Leu His Lys Gly Glu Asn Ile Glu Asp Ile Pro Lys Glu Val Leu
 53 58 63 68

atg gac tgt gcc cac ctt gtg aag gcc aat agc att caa gga gct att 414
 Met Asp Cys Ala His Leu Val Lys Ala Asn Ser Ile Gln Gly Ala Ile
 69 74 79 84

cat cac taa tgaaagt tgaaaatatg tcttcaaatac aggatggcca tgattcatat 470
 His His *
 85

gaattcatgt aaaaggagaa gaggagaaaa ggacctttga 510

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 ctcacactag tacgtggccc ctcggtggtt tgtcctcgag gtcgaaggtc cagatgtcca 180
 ggggctgccc tggactccag agtgggtgcgg ctgagcaggc tgtggtcttg ggtgcttggg 240
 cacctcccgt ctctccctgc tcagagttct tctctcctgg gcagccagaa aggatcagaa 300
 ccggtcacat gcagagcggc ctcccgtatc ccacagcagc tccgttctct aatctgggtc 360
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atcttgcagc ctgttgcctt ggacagtggg tgtgctgtgg gtggaggatg ggcacctgcc 540

tccacggaag catccccagc ttgcccctca gtcacacgaa gcgtctgtcc ccagcctggg 600

gcatttctga gtggcctcca cttggcctct tcctttttct ggagcaagta tttgaactcc 660

tgcaggcgcc agagatctcc ttacctgttt cccgctaccc ttctccagcc aggtttctgc 720

cctcagccag attgtcctgc agtgacttgc ttttggccat ggagtagtgg ctgctcagtg 780

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ttgcttacag ttctctggtc ctggacacct gaggtctcgg cctccccagg acggcccttc 900

cagattctca ggaccacctt gccctccctg cctgtctcc taggtgacct tggcaaag 958

atg aga gtg cac att tcg tcc tgc ctg aag gtc cag gag cag atg gcc 1006

Met Arg Val His Ile Ser Ser Cys Leu Lys Val Gln Glu Gln Met Ala

1 5 10 15

aac tgc ccc aag ttc gtc ccc gtg gtg ccc aca tca cag cct atc ccc 1054

Asn Cys Pro Lys Phe Val Pro Val Val Pro Thr Ser Gln Pro Ile Pro

17 22 27 32

agc aac atc ccc aac agg tcc acc ttc gcc tgc ccg tac tgt ggt gcc 1102

Ser Asn Ile Pro Asn Arg Ser Thr Phe Ala Cys Pro Tyr Cys Gly Ala

33 38 43 48

cgc aac ctg gac cag cag gag ctg gtg aag cac tgt gtg gaa agc cac 1150

Arg Asn Leu Asp Gln Gln Glu Leu Val Lys His Cys Val Glu Ser His

49 54 59 64

cgc agc gac ccc aac cgc gtg gtg tgc ccc atc tgc tgc gca atg ccc 1198

Arg Ser Asp Pro Asn Arg Val Val Cys Pro Ile Cys Ser Ala Met Pro

65 70 75 80

tgg ggg gac ccc agc tac aag agc gcc aac ttc ctg cag cac ctg ctt 1246

Trp Gly Asp Pro Ser Tyr Lys Ser Ala Asn Phe Leu Gln His Leu Leu

81 86 91 96

cac cga cac aag ttc tcc tac gac acc ttt gtg gac tac agt att gac 1294

His Arg His Lys Phe Ser Tyr Asp Thr Phe Val Asp Tyr Ser Ile Asp

97 102 107 112

gag gag gcc gcc ttc cag gct gct ctg gcc ctg tct ctc tct gag aac 1342

Glu Glu Ala Ala Phe Gln Ala Ala Leu Ala Leu Ser Leu Ser Glu Asn

113 118 123 128

tga aggg aagcgcagcc acccgctgc gtctggggtc agggatgtcc ccgctcctgt 1399

*

129

gtcgacctg gcacctgtc gggagcgcac ctcaccggac tgagctcaca ggaggagcct 1459

gcacccgcgc agaagggggag ccggggccga gcctccgggc ctgaatacgg gccagccgcc 1519

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 caggggcccc cttggcgggc cgggcaaacac gtcaacattc ttttctgttc ttggcattaa 2359
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 aaaaaaaaaa a 2430

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 Met Ile Ser
 1
 aga tac act cgg aag gcg gtg cca cag agc ttg gag ctg aaa gga ata 164
 Arg Tyr Thr Arg Lys Ala Val Pro Gln Ser Leu Glu Leu Lys Gly Ile
 4 9 14 19
 aca aaa cat gct ctt aac cat cat ccc cct cca gag aag ctg gag gaa 212

Thr	Lys	His	Ala	Leu	Asn	His	His	Pro	Pro	Pro	Glu	Lys	Leu	Glu	Glu		
20					25					30					35		
att	tcc	ccc	acc	agt	gac	agt	cat	gag	aaa	gac	aca	agt	tcc	caa	agc	260	
Ile	Ser	Pro	Thr	Ser	Asp	Ser	His	Glu	Lys	Asp	Thr	Ser	Ser	Gln	Ser		
36					41					46					51		
aag	tct	gac	atc	aca	aga	gaa	tca	tct	ttt	aca	tca	gcc	gac	act	ggg	308	
Lys	Ser	Asp	Ile	Thr	Arg	Glu	Ser	Ser	Phe	Thr	Ser	Ala	Asp	Thr	Gly		
52					57					62					67		
aat	tca	ctg	tct	gct	ttt	cca	agt	tat	aca	ggc	gca	ggg	ata	tct	act	356	
Asn	Ser	Leu	Ser	Ala	Phe	Pro	Ser	Tyr	Thr	Gly	Ala	Gly	Ile	Ser	Thr		
68					73					78					83		
gaa	gga	agc	tcg	gac	ttc	tcc	tgg	gga	tat	ggg	gaa	ctc	gat	caa	aat	404	
Glu	Gly	Ser	Ser	Asp	Phe	Ser	Trp	Gly	Tyr	Gly	Glu	Leu	Asp	Gln	Asn		
84					89					94					99		
gcc	act	gaa	aaa	gtc	cag	aca	atg	ttc	aca	gcc	att	gat	gaa	ctc	ttg	452	
Ala	Thr	Glu	Lys	Val	Gln	Thr	Met	Phe	Thr	Ala	Ile	Asp	Glu	Leu	Leu		
100					105					110					115		
tat	gag	cag	aag	ttg	agt	gtg	cat	acc	aag	agt	cta	caa	gaa	gag	tgc	500	
Tyr	Glu	Gln	Lys	Leu	Ser	Val	His	Thr	Lys	Ser	Leu	Gln	Glu	Glu	Cys		
116					121					126					131		
caa	cag	tgg	aca	gct	agc	ttt	cct	cac	ctc	agg	att	cta	ggg	agg	cag	548	
Gln	Gln	Trp	Thr	Ala	Ser	Phe	Pro	His	Leu	Arg	Ile	Leu	Gly	Arg	Gln		
132					137					142					147		
ata	atc	act	cca	agt	gaa	ggg	tat	aga	ttg	tat	cct	aga	tcc	cct	tct	596	
Ile	Ile	Thr	Pro	Ser	Glu	Gly	Tyr	Arg	Leu	Tyr	Pro	Arg	Ser	Pro	Ser		
148					153					158					163		
gct	gtt	tcc	gct	tca	tat	gaa	aca	acc	ttg	tct	caa	gaa	aga	gat	tct	644	
Ala	Val	Ser	Ala	Ser	Tyr	Glu	Thr	Thr	Leu	Ser	Gln	Glu	Arg	Asp	Ser		
164					169					174					179		
act	ata	ttt	ggg	ata	agg	gga	aag	aag	tta	cat	ttt	tca	tct	tct	tat	692	
Thr	Ile	Phe	Gly	Ile	Arg	Gly	Lys	Lys	Leu	His	Phe	Ser	Ser	Ser	Tyr		
180					185					190					195		
gct	cat	aaa	gca	tct	tcc	att	gcc	aaa	tcc	tcc	agc	ttt	tgt	tct	atg	740	
Ala	His	Lys	Ala	Ser	Ser	Ile	Ala	Lys	Ser	Ser	Ser	Phe	Cys	Ser	Met		
196					201					206					211		
gaa	aga	gat	gag	gaa	gac	tct	ata	atc	gtc	tca	gaa	gga	ata	att	gag	788	
Glu	Arg	Asp	Glu	Glu	Asp	Ser	Ile	Ile	Val	Ser	Glu	Gly	Ile	Ile	Glu		
212					217					222					227		
gaa	tac	cta	gca	ttc	gat	cac	ata	gat	ata	gaa	gag	gga	ttt	cat	ggg	836	
Glu	Tyr	Leu	Ala	Phe	Asp	His	Ile	Asp	Ile	Glu	Glu	Gly	Phe	His	Gly		
228					233					238					243		
aag	aaa	tca	gaa	gca	gct	aca	gag	aaa	cag	aaa	tta	ggg	tat	cct	ccc	884	
Lys	Lys	Ser	Glu	Ala	Ala	Thr	Glu	Lys	Gln	Lys	Leu	Gly	Tyr	Pro	Pro		

244	249	254	259	
att gct cca ttt tac	tgc atg aaa gaa gat	gtc ctt gct tat gtg	ttt	932
Ile Ala Pro Phe Tyr	Cys Met Lys Glu Asp	Val Leu Ala Tyr Val	Phe	
260	265	270	275	
gac agt gta tgg tgc	aag gtt gtg agc tgt	atg gag cag ttg aca	cgt	980
Asp Ser Val Trp Cys	Lys Val Val Ser Cys	Met Glu Gln Leu Thr	Arg	
276	281	286	291	
agt cac tgg gaa gga	ttt gcc tct gat gat	gag agt aat gtt gca	gtt	1028
Ser His Trp Glu Gly	Phe Ala Ser Asp Asp	Glu Ser Asn Val Ala	Val	
292	297	302	307	
acc aga ccc gat tca	gaa agt tcc tgt gtg	ctg agt gaa cta cat	cct	1076
Thr Arg Pro Asp Ser	Glu Ser Ser Cys Val	Leu Ser Glu Leu His	Pro	
308	313	318	323	
ttg gtg tta ccg cga	gtg cca cag tct aag	gtg ctg tac att acc	tca	1124
Leu Val Leu Pro Arg	Val Pro Gln Ser Lys	Val Leu Tyr Ile Thr	Ser	
324	329	334	339	
aat ccg atg agt ctc	tgt caa gca agc aga	cat cag cca aat gtg	aat	1172
Asn Pro Met Ser Leu	Cys Gln Ala Ser Arg	His Gln Pro Asn Val	Asn	
340	345	350	355	
gat ctc ttg gtt cat	gga atg cct cta cag	cca aga aat ctc tcc	cta	1220
Asp Leu Leu Val His	Gly Met Pro Leu Gln	Pro Arg Asn Leu Ser	Leu	
356	361	366	371	
atg gac aag ctc cta	gat ctt gat gac aag	cta ctt atg agg cct	ggg	1268
Met Asp Lys Leu Leu	Asp Leu Asp Asp Lys	Leu Leu Met Arg Pro	Gly	
372	377	382	387	
tcc agt acc atc ctt	tca act cga aat tgg	cca aat cga gct gtg	gag	1316
Ser Ser Thr Ile Leu	Ser Thr Arg Asn Trp	Pro Asn Arg Ala Val	Glu	
388	393	398	403	
ttt agt aca tca tct	ctg tca tac aca gtg	cag tcc acc agg aga	cgc	1364
Phe Ser Thr Ser Ser	Leu Ser Tyr Thr Val	Gln Ser Thr Arg Arg	Arg	
404	409	414	419	
aat cca cca cca cga	act ctt cat ccg atc	agc acg agc cat tca	tgt	1412
Asn Pro Pro Pro Arg	Thr Leu His Pro Ile	Ser Thr Ser His Ser	Cys	
420	425	430	435	
gct gaa aca cca aga	tct gtg gaa gaa atc	ctc aga gga gcc cga	gtc	1460
Ala Glu Thr Pro Arg	Ser Val Glu Glu Ile	Leu Arg Gly Ala Arg	Val	
436	441	446	451	
cca gtg gca ccc gac	tcg ctc tcc tct ccc	tca ccg acg ccc ctg	agt	1508
Pro Val Ala Pro Asp	Ser Leu Ser Ser Pro	Ser Pro Thr Pro Leu	Ser	
452	457	462	467	
cga aat aat ctg cta	cca cct att ggc aca	gct gaa gtg gaa cat	gtg	1556
Arg Asn Asn Leu Leu	Pro Pro Ile Gly Thr	Ala Glu Val Glu His	Val	
468	473	478	483	

agc act gtg ggg cca caa aga cag atg aaa ccc cat ggc gac tct agt	1604
Ser Thr Val Gly Pro Gln Arg Gln Met Lys Pro His Gly Asp Ser Ser	
484 489 494 499	
cga gct caa agt gcg gtg gtg gat gaa cct aac tat cag cag cca caa	1652
Arg Ala Gln Ser Ala Val Val Asp Glu Pro Asn Tyr Gln Gln Pro Gln	
500 505 510 515	
gaa agg ctc ctt ttg ccc gac ttt ttc ccc agg ccc aac aca act caa	1700
Glu Arg Leu Leu Leu Pro Asp Phe Phe Pro Arg Pro Asn Thr Thr Gln	
516 521 526 531	
tca ttt ttg ctg gat aca cag tat cgt cgc tca tgt gca gtt gag tat	1748
Ser Phe Leu Leu Asp Thr Gln Tyr Arg Arg Ser Cys Ala Val Glu Tyr	
532 537 542 547	
cct cat cag gcc cga cct ggc agg gga tct gca ggt cct cag tta cat	1796
Pro His Gln Ala Arg Pro Gly Arg Gly Ser Ala Gly Pro Gln Leu His	
548 553 558 563	
ggg tct aca aaa tct caa agc gga ggc aga cca gtc tct cga acc agg	1844
Gly Ser Thr Lys Ser Gln Ser Gly Gly Arg Pro Val Ser Arg Thr Arg	
564 569 574 579	
cag gga cca taa ggc aaatgagaag aatctatcag gctgcaggaa acacgagatt	1899
Gln Gly Pro *	
580	
tcatgaagca gtattcagtc atcaagtgat gcagagcttg tatagaagat cgactagaaa	1959
tcatcttcat gaagagtgat ttgtggcaciaa gtgaccgaag aacaaaacac catagcagcc	2019
aaaaatgaca tgagtgttgt ttctatctcc agttactgtc tctttcagca gaaattaacc	2079
tatcccattg gaaaggcaag ttgttaccca aagatgcaac agtgaataat accccaaatc	2139
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acatacaciaa aaagcagcaa atcatcagtg acaatatcac tggcttcaga atacttcagc	2259
ctgtgttcat ttctggagag ttgtactcag ttttaagtca ttttgctgtt gaaaatctga	2319
cctcatcaaa tagatgtcat tcctaaaact ctcttttagat gtccctaccct atcagcagat	2379
taaaatggaa ggggtgtgta actaaaaaca taaatgttaa gcattagtat aaagtaactt	2439
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<220>
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 <222> (52)..(564)

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 Met Arg
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 Leu Gln Gly Ala Ile Phe Val Leu Leu Pro His Leu Gly Pro Ile Leu
 3 8 13 18
 gtc tgg ctg ttc act cgt gat cac atg tct ggt tgg tgt gag ggc ccg 153
 Val Trp Leu Phe Thr Arg Asp His Met Ser Gly Trp Cys Glu Gly Pro
 19 24 29 34
 agg atg ctg tcc tgg tgc cca ttc tac aaa gtc tta ttg ctt gta cag 201

Arg	Met	Leu	Ser	Trp	Cys	Pro	Phe	Tyr	Lys	Val	Leu	Leu	Leu	Val	Gln	
35					40					45					50	
aca	gcc	atc	tac	tct	gtc	gtg	ggc	tat	gcc	tcc	tac	ctg	gtg	tgg	aag	249
Thr	Ala	Ile	Tyr	Ser	Val	Val	Gly	Tyr	Ala	Ser	Tyr	Leu	Val	Trp	Lys	
51					56					61					66	
gac	ctg	gga	ggg	ggc	ttg	ggg	tgg	ccc	ctg	gcc	ctg	cct	ctt	ggc	ctc	297
Asp	Leu	Gly	Gly	Gly	Leu	Gly	Trp	Pro	Leu	Ala	Leu	Pro	Leu	Gly	Leu	
67					72					77					82	
tat	gct	gtt	cag	ctc	acc	atc	agc	tgg	act	gtc	ctg	gtt	ctc	ttt	ttc	345
Tyr	Ala	Val	Gln	Leu	Thr	Ile	Ser	Trp	Thr	Val	Leu	Val	Leu	Phe	Phe	
83					88					93					98	
aca	gtc	cac	aac	cct	ggt	ctg	gcc	ctg	ctg	cac	ctg	ctg	ctg	ctg	tat	393
Thr	Val	His	Asn	Pro	Gly	Leu	Ala	Leu	Leu	His	Leu	Leu	Leu	Leu	Tyr	
99					104					109					114	
ggg	ctg	gtg	gtg	agc	aca	gca	ctg	atc	tgg	cat	ccc	atc	aac	aaa	ctg	441
Gly	Leu	Val	Val	Ser	Thr	Ala	Leu	Ile	Trp	His	Pro	Ile	Asn	Lys	Leu	
115					120					125					130	
gct	gcc	ctg	tta	ctg	ctg	ccc	tac	cta	gcc	tgg	ctc	acc	gtg	act	tca	489
Ala	Ala	Leu	Leu	Leu	Leu	Pro	Tyr	Leu	Ala	Trp	Leu	Thr	Val	Thr	Ser	
131					136					141					146	
gcc	ctc	acc	tac	cac	ctg	tgg	agg	gac	agc	ctt	tgt	cca	gtg	cac	cag	537
Ala	Leu	Thr	Tyr	His	Leu	Trp	Arg	Asp	Ser	Leu	Cys	Pro	Val	His	Gln	
147					152					157					162	
cct	cag	ccc	acg	gag	aag	agt	gac	tga	ggccc	tagggc	atgg	gagagg	gaggg			589
Pro	Gln	Pro	Thr	Glu	Lys	Ser	Asp	*								
163					168											
acgccc	caggg	tgggg	aggaa	gagtc	tgc	caa	gcagg	gctgt	ggag	ttagg	ttc	accccc	aa			649
tggg	accacc	ctc	ctgg	gtc	cc	ctgg	agcc	gttt	ttc	ctt	agaa	atcaga	gaa	atgg	ggaa	709
aggg	gggg	ggaa	aggg	attt	ca	cact	taa	ata	aaaa	aatacc	acc	agca	act	ctg	aaaa	769
aaaaa																774

<210> 379
 <211> 1601
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (277) .. (1428)

<400> 379
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183	188	193	198	
ttt tta aag aga ttt	gta gaa gct acc aga	aag tgg aaa gtc ggc att		918
Phe Leu Lys Arg Phe	Val Glu Ala Thr Arg	Lys Trp Lys Val Gly Ile		
199	204	209	214	
ccc tct gat cca ctg	gtg agc ata ggt gct	ctg ata agt aaa gca cat		966
Pro Ser Asp Pro Leu	Val Ser Ile Gly Ala	Leu Ile Ser Lys Ala His		
215	220	225	230	
ttg gag aaa gtc aga	agt tac gtc aag aga	gct ctt gct gaa ggt gcc		1014
Leu Glu Lys Val Arg	Ser Tyr Val Lys Arg	Ala Leu Ala Glu Gly Ala		
231	236	241	246	
caa att tgg tgc ggt	gag gga gtg gat aag	ttg agc ctc cct gcc agg		1062
Gln Ile Trp Cys Gly	Glu Gly Val Asp Lys	Leu Ser Leu Pro Ala Arg		
247	252	257	262	
aac cag gca ggc tac	ttt atg ctt ccc acg	gtg ata aca gac att aag		1110
Asn Gln Ala Gly Tyr	Phe Met Leu Pro Thr	Val Ile Thr Asp Ile Lys		
263	268	273	278	
gat gaa tcc tgc tgc	atg acg gaa gag ata	ttt ggt cca gtg acg tgt		1158
Asp Glu Ser Cys Cys	Met Thr Glu Glu Ile	Phe Gly Pro Val Thr Cys		
279	284	289	294	
gtc gtc ccc ttt gat	agt gaa gag gag gtg	att gaa aga gcc aac aac		1206
Val Val Pro Phe Asp	Ser Glu Glu Glu Val	Ile Glu Arg Ala Asn Asn		
295	300	305	310	
gtt aag tat ggg ctg	gcg gct acc gtg tgg	tcc agc aat gtg ggg cgc		1254
Val Lys Tyr Gly Leu	Ala Ala Thr Val Trp	Ser Ser Asn Val Gly Arg		
311	316	321	326	
gtc cac cgg gtg gct	aag aag ctg cag tct	ggc ttg gtc tgg acc aac		1302
Val His Arg Val Ala	Lys Lys Leu Gln Ser	Gly Leu Val Trp Thr Asn		
327	332	337	342	
tgc tgg ctc atc agg	gag ctg aac ctt cct	ttc ggg ggg atg aag agt		1350
Cys Trp Leu Ile Arg	Glu Leu Asn Leu Pro	Phe Gly Gly Met Lys Ser		
343	348	353	358	
tct gga ata ggt aga	gag gga gcc aag gac	tct tac gac ttc ttc act		1398
Ser Gly Ile Gly Arg	Glu Gly Ala Lys Asp	Ser Tyr Asp Phe Phe Thr		
359	364	369	374	
gag atc aaa acc atc	acc gtt aaa cac tga	t ctttgctaatt ggtggagcca		1449
Glu Ile Lys Thr Ile	Thr Val Lys His *			
375	380			
ctatggccaa tgcttggtg	caggcatcag ttgttcaatg	tggtagatga aaatcatggc		1509
atgaattcca gctatgcctt	gacttggcag aaggttatct	ctagcttata ctcagttctt		1569
agtaacttta cccactagtg	aagagatact gt			1601

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 <211> 2232
 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (1) .. (1698)

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 Met Gly Arg Asn Gln Ser Arg Lys Ala Glu Asn Ser Lys Asn Gln Ser
 1 5 10

gcc tca tct aca cca aag gat cac agc gcc tcg cca gca acg gaa caa 96
 Ala Ser Ser Thr Pro Lys Asp His Ser Ala Ser Pro Ala Thr Glu Gln
 17 22 27 32

agc tgg atg ggg aat gac ttt gat gag ttg aca gaa tta ggc ttc aga 144
 Ser Trp Met Gly Asn Asp Phe Asp Glu Leu Thr Glu Leu Gly Phe Arg
 33 38 43 48

aaa tcg gta atg aca aac ttc tcc cag cta aag gag gat gtt cga acc 192
 Lys Ser Val Met Thr Asn Phe Ser Gln Leu Lys Glu Asp Val Arg Thr
 49 54 59 64

cat cac aaa gaa gct aaa aac cta gaa aaa aga tta gac aaa tgg cta 240
 His His Lys Glu Ala Lys Asn Leu Glu Lys Arg Leu Asp Lys Trp Leu
 65 70 75 80

act aga ata aac agc ata gag gag acc tta aat gac ctg atg gag ctg 288
 Thr Arg Ile Asn Ser Ile Glu Glu Thr Leu Asn Asp Leu Met Glu Leu
 81 86 91 96

aaa acc atg gca cga gaa cta cgt gac aca tgc aca agc ttc agt agc 336
 Lys Thr Met Ala Arg Glu Leu Arg Asp Thr Cys Thr Ser Phe Ser Ser
 97 102 107 112

cga ttc gat caa gtg gaa gaa ggg gaa ata caa act acc atc aga gaa 384
 Arg Phe Asp Gln Val Glu Glu Gly Glu Ile Gln Thr Thr Ile Arg Glu
 113 118 123 128

tat tat gaa cac ctc tac gca aat aaa cta gaa aat cta gaa gaa atg 432
 Tyr Tyr Glu His Leu Tyr Ala Asn Lys Leu Glu Asn Leu Glu Glu Met
 129 134 139 144

gat aaa ttc ctg gac aca tac act ctc cca aga cta aac cag gaa gaa 480
 Asp Lys Phe Leu Asp Thr Tyr Thr Leu Pro Arg Leu Asn Gln Glu Glu
 145 150 155 160

gtt gaa tcc ctg aat aga cca ata aca ggt tct gaa att gag gca ata 528
 Val Glu Ser Leu Asn Arg Pro Ile Thr Gly Ser Glu Ile Glu Ala Ile
 161 166 171 176

att aat agc cta cca acc aaa aaa att cca ggg cca gac aga ttc aca 576

Ile	Asn	Ser	Leu	Pro	Thr	Lys	Lys	Ile	Pro	Gly	Pro	Asp	Arg	Phe	Thr	
177					182					187					192	
gcc	aaa	ttc	tac	cag	agg	tac	aaa	gag	gag	ctg	agt	aac	ctg	atc	cac	624
Ala	Lys	Phe	Tyr	Gln	Arg	Tyr	Lys	Glu	Glu	Leu	Ser	Asn	Leu	Ile	His	
193					198					203					208	
tac	ctg	gga	ctg	agc	cat	cac	ctg	ctg	gca	ctg	aat	ttt	atc	att	gtt	672
Tyr	Leu	Gly	Leu	Ser	His	His	Leu	Leu	Ala	Leu	Asn	Phe	Ile	Ile	Val	
209					214					219					224	
tct	ttt	ggc	aaa	aaa	agc	gcg	tgg	tct	tct	gcc	caa	gtg	aag	gtg	acc	720
Ser	Phe	Gly	Lys	Lys	Ser	Ala	Trp	Ser	Ser	Ala	Gln	Val	Lys	Val	Thr	
225					230					235					240	
gac	aca	gac	ttt	gat	ggg	gtg	gaa	gtc	aga	gtg	ttt	gaa	ggc	cct	ccg	768
Asp	Thr	Asp	Phe	Asp	Gly	Val	Glu	Val	Arg	Val	Phe	Glu	Gly	Pro	Pro	
241					246					251					256	
aag	ccc	gaa	gag	cca	ctg	aaa	cgc	agc	gtc	gtt	tat	atc	cac	gga	gga	816
Lys	Pro	Glu	Glu	Pro	Leu	Lys	Arg	Ser	Val	Val	Tyr	Ile	His	Gly	Gly	
257					262					267					272	
ggc	tgg	gcc	ttg	gca	agt	gca	aaa	atc	agg	tat	tat	gat	gag	ctg	tgt	864
Gly	Trp	Ala	Leu	Ala	Ser	Ala	Lys	Ile	Arg	Tyr	Tyr	Asp	Glu	Leu	Cys	
273					278					283					288	
aca	gca	atg	gct	gag	gaa	ttg	aat	gct	gtc	att	gtt	tcc	att	gaa	tac	912
Thr	Ala	Met	Ala	Glu	Glu	Leu	Asn	Ala	Val	Ile	Val	Ser	Ile	Glu	Tyr	
289					294					299					304	
agg	cta	gtt	cca	aag	gtt	tat	ttt	cct	gag	caa	att	cat	gat	gtt	gta	960
Arg	Leu	Val	Pro	Lys	Val	Tyr	Phe	Pro	Glu	Gln	Ile	His	Asp	Val	Val	
305					310					315					320	
cgg	gcc	aca	aag	tat	ttc	ctg	aag	cca	gaa	gtc	tta	cag	aag	tat	atg	1008
Arg	Ala	Thr	Lys	Tyr	Phe	Leu	Lys	Pro	Glu	Val	Leu	Gln	Lys	Tyr	Met	
321					326					331					336	
gtt	gat	cca	ggc	aga	att	tgc	att	tct	ggt	gac	agt	gct	ggt	gga	aat	1056
Val	Asp	Pro	Gly	Arg	Ile	Cys	Ile	Ser	Gly	Asp	Ser	Ala	Gly	Gly	Asn	
337					342					347					352	
ctg	gct	gct	gcc	ctt	gga	caa	cag	ttt	act	caa	gat	gcc	agc	cta	aaa	1104
Leu	Ala	Ala	Ala	Leu	Gly	Gln	Gln	Phe	Thr	Gln	Asp	Ala	Ser	Leu	Lys	
353					358					363					368	
aat	aag	ctc	aaa	cta	caa	gct	tta	att	tat	cca	gtt	ctt	caa	gct	tta	1152
Asn	Lys	Leu	Lys	Leu	Gln	Ala	Leu	Ile	Tyr	Pro	Val	Leu	Gln	Ala	Leu	
369					374					379					384	
gat	ttt	aac	aca	cca	tct	tat	cag	caa	aat	gtg	aac	acc	cca	atc	ctg	1200
Asp	Phe	Asn	Thr	Pro	Ser	Tyr	Gln	Gln	Asn	Val	Asn	Thr	Pro	Ile	Leu	
385					390					395					400	
ccc	cgc	tat	gtc	atg	gtg	aag	tat	tgg	gtg	gac	tac	ttc	aaa	ggc	aac	1248
Pro	Arg	Tyr	Val	Met	Val	Lys	Tyr	Trp	Val	Asp	Tyr	Phe	Lys	Gly	Asn	

401	406	411	416	
tat gac ttt gtg cag gca atg atc gtt aac aat cac act tca ctt gat				1296
Tyr Asp Phe Val Gln Ala Met Ile Val Asn Asn His Thr Ser Leu Asp				
417	422	427	432	
gtg gaa gag gct gct gct gtc agg gcc cgt cta aac tgg aca tcc ctc				1344
Val Glu Glu Ala Ala Ala Val Arg Ala Arg Leu Asn Trp Thr Ser Leu				
433	438	443	448	
ttg cct gca tcc ttc aca aag aac tac aag cct gtt gta cag acc aca				1392
Leu Pro Ala Ser Phe Thr Lys Asn Tyr Lys Pro Val Val Gln Thr Thr				
449	454	459	464	
ggc aat gcc agg att gtc cag gag ctt cct cag ttg ctg gat gcc cgc				1440
Gly Asn Ala Arg Ile Val Gln Glu Leu Pro Gln Leu Leu Asp Ala Arg				
465	470	475	480	
tcc gcc cca ctc att gca gac cag gca gtg ctg cag ctc ctc cca aag				1488
Ser Ala Pro Leu Ile Ala Asp Gln Ala Val Leu Gln Leu Leu Pro Lys				
481	486	491	496	
acc tac att ctg acg tgt gag cat gat gtc ctc aga gac gat ggc atc				1536
Thr Tyr Ile Leu Thr Cys Glu His Asp Val Leu Arg Asp Asp Gly Ile				
497	502	507	512	
atg tat gcc aag cgt ttg gag agt gcc ggt gtg gag gtg acc ctg gat				1584
Met Tyr Ala Lys Arg Leu Glu Ser Ala Gly Val Glu Val Thr Leu Asp				
513	518	523	528	
cac ttt gag gat ggc ttt cac gga tgt atg att ttc act agc tgg ccc				1632
His Phe Glu Asp Gly Phe His Gly Cys Met Ile Phe Thr Ser Trp Pro				
529	534	539	544	
acc aac ttc tca gtg gga atc cgg act agg aat agt tac atc aag tgg				1680
Thr Asn Phe Ser Val Gly Ile Arg Thr Arg Asn Ser Tyr Ile Lys Trp				
545	550	555	560	
cta gat caa aac ctg taa aggagc aaaacttcca gaagcctcga gccctcttg				1734
Leu Asp Gln Asn Leu *				
561	566			
acctcctaca cctgcttttg aaagacatgc acttttttagt tgactaatc ttcctcccat				1794
tccctctac ttgcgagtta tggaatttct attccataac tgaagtcttt atgataacct				1854
aatttttaaa aatgaatttg actaacttaa gtgcaaaaca tgtaaatttg gttcccagag				1914
tgggccaatc totctgttct tgttatctta gccaaactata ctgataccta cagctacaga				1974
aagcaggact aggaactgga aataactttg ggtcctgcct tcattaggac gttcttttta				2034
gaagcagttc ttccagctct ggatcataga gtgaccttta ataagttaaa aaaacgagga				2094
ctccttaatt ctgctagagt taaccttgag ttcagagcag tattaaatgc gtgcactttc				2154
aggtcagtac tggggaccaaa gtaccctctg gtcttttggtg aatggatggt tttgtttcca				2214

tggaattttt ggcaaggt

2232

<210> 381
<211> 2844
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (355) .. (2223)

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gcgcgacagg gaaaataaaa gaagcaaaaa caggccctgc tgtgagggac cacgaggcag 180
tgccaggatg aaagagttgg agtaacctag gtgattctga gtgaatcagt caggaggcct 240
tcctggaggg ggctgaggcc ccagcttctg gccaccacaa cgtatcaagc tatctccagg 300
gttgggctca ggactcagag ctgacgcagc tgggggtgcc cttgggtctg gagg atg 357
Met
1
agg ctc ctc cgc aga cgc cac atg ccc ctg cgc ctg gcc atg gtg ggc 405
Arg Leu Leu Arg Arg Arg His Met Pro Leu Arg Leu Ala Met Val Gly
2 7 12 17
tgc gcc ttt gtg ctc ttc ctc ttc ctc ctg cat agg gat gtg agc agc 453
Cys Ala Phe Val Leu Phe Leu Phe Leu Leu His Arg Asp Val Ser Ser
18 23 28 33
aga gag gag gcc aca gag aag ccg tgg ctg aag tcc ctg gtg agc cgg 501
Arg Glu Glu Ala Thr Glu Lys Pro Trp Leu Lys Ser Leu Val Ser Arg
34 39 44 49
aag gat cac gtc ctg gac ctc atg ctg gag gcc atg aac aac ctt aga 549
Lys Asp His Val Leu Asp Leu Met Leu Glu Ala Met Asn Asn Leu Arg
50 55 60 65
gat tca atg ccc aag ctc caa atc agg gct cca gaa gcc cag cag act 597
Asp Ser Met Pro Lys Leu Gln Ile Arg Ala Pro Glu Ala Gln Gln Thr
66 71 76 81
ctg ttc tcc ata aat cag tcc tgc ctc cct ggg ttc tat acc cca gct 645
Leu Phe Ser Ile Asn Gln Ser Cys Leu Pro Gly Phe Tyr Thr Pro Ala
82 87 92 97
gaa ctg aag ccc ttc tgg gaa cgg cca cca cag gac ccc aat gcc cct 693
Glu Leu Lys Pro Phe Trp Glu Arg Pro Pro Gln Asp Pro Asn Ala Pro
98 103 108 113

ggg gca gat gga aaa gca ttt cag aag agc aag tgg acc ccc ctg gag
 Gly Ala Asp Gly Lys Ala Phe Gln Lys Ser Lys Trp Thr Pro Leu Glu
 114 119 124 129

741

acc cag gaa aag gaa gaa ggc tat aag aag cac tgt ttc aat gcc ttt
 Thr Gln Glu Lys Glu Glu Gly Tyr Lys Lys His Cys Phe Asn Ala Phe
 130 135 140 145

789

gcc agc gac cgg atc tcc ctg cag agg tcc ctg ggg cca gac acc cga
 Ala Ser Asp Arg Ile Ser Leu Gln Arg Ser Leu Gly Pro Asp Thr Arg
 146 151 156 161

837

cca cct gag tgt gtg gac cag aag ttc cgg cgc tgc ccc cca ctg gcc
 Pro Pro Glu Cys Val Asp Gln Lys Phe Arg Arg Cys Pro Pro Leu Ala
 162 167 172 177

885

acc acc agc gtg atc att gtg ttc cac aac gaa gcc tgg tcc aca ctg
 Thr Thr Ser Val Ile Ile Val Phe His Asn Glu Ala Trp Ser Thr Leu
 178 183 188 193

933

ctg cga aca gtg tac agc gtc cta cac acc acc cct gcc atc ttg ctc
 Leu Arg Thr Val Tyr Ser Val Leu His Thr Thr Pro Ala Ile Leu Leu
 194 199 204 209

981

aag gag atc ata ctg gtg gat gat gcc agc aca gag gag cac cta aag
 Lys Glu Ile Ile Leu Val Asp Asp Ala Ser Thr Glu Glu His Leu Lys
 210 215 220 225

1029

gag aag ctg gag cag tac gtg aag cag ctg cag gtg gtg agg gtg gtg
 Glu Lys Leu Glu Gln Tyr Val Lys Gln Leu Gln Val Val Arg Val Val
 226 231 236 241

1077

cgg cag gag gag cgg aag ggg ctg atc acc gcc cgg ctg ctg ggg gcc
 Arg Gln Glu Glu Arg Lys Gly Leu Ile Thr Ala Arg Leu Leu Gly Ala
 242 247 252 257

1125

agc gtg gca cag gcg gag gtg ctc acg ttc ctg gat gcc cac tgt gag
 Ser Val Ala Gln Ala Glu Val Leu Thr Phe Leu Asp Ala His Cys Glu
 258 263 268 273

1173

tgc ttc cac ggc tgg ctg gag ccc ctc ctg gct cga atc gct gag gac
 Cys Phe His Gly Trp Leu Glu Pro Leu Leu Ala Arg Ile Ala Glu Asp
 274 279 284 289

1221

aag aca gtg gtg gtg agc cca gac atc gtc acc atc gac ctt aat act
 Lys Thr Val Val Val Ser Pro Asp Ile Val Thr Ile Asp Leu Asn Thr
 290 295 300 305

1269

ttt gag ttc gcc aag ccc gtc cag agg ggc aga gtc cat agc cga ggc
 Phe Glu Phe Ala Lys Pro Val Gln Arg Gly Arg Val His Ser Arg Gly
 306 311 316 321

1317

aac ttt gac tgg agc ctg acc ttc ggc tgg gaa aca ctt cct cca cat
 Asn Phe Asp Trp Ser Leu Thr Phe Gly Trp Glu Thr Leu Pro Pro His
 322 327 332 337

1365

gag aag cag agg cgc aag gat gaa acc tac ccc atc aaa tcc ccg acg	1413
Glu Lys Gln Arg Arg Lys Asp Glu Thr Tyr Pro Ile Lys Ser Pro Thr	
338 343 348 353	
ttt gct ggt ggc ctc ttc tcc atc tcc aag tcc tac ttt gag cac atc	1461
Phe Ala Gly Gly Leu Phe Ser Ile Ser Lys Ser Tyr Phe Glu His Ile	
354 359 364 369	
ggt acc tat gat aat cag atg gag atc tgg gga ggg gag aac gtg gaa	1509
Gly Thr Tyr Asp Asn Gln Met Glu Ile Trp Gly Gly Glu Asn Val Glu	
370 375 380 385	
atg tcc ttc cgg gtg tgg cag tgt ggg ggc cag ctg gag atc atc ccc	1557
Met Ser Phe Arg Val Trp Gln Cys Gly Gly Gln Leu Glu Ile Ile Pro	
386 391 396 401	
tgc tct gtc gta ggc cat gtg ttc cgg acc aag agc ccc cac acc ttc	1605
Cys Ser Val Val Gly His Val Phe Arg Thr Lys Ser Pro His Thr Phe	
402 407 412 417	
ccc aag ggc act agt gtc att gct cgc aat caa gtg cgc ctg gca gag	1653
Pro Lys Gly Thr Ser Val Ile Ala Arg Asn Gln Val Arg Leu Ala Glu	
418 423 428 433	
gtc tgg atg gac agc tac aag aag att ttc tat agg aga aat ctg cag	1701
Val Trp Met Asp Ser Tyr Lys Lys Ile Phe Tyr Arg Arg Asn Leu Gln	
434 439 444 449	
gca gca aag atg gcc caa gag aaa tcc ttc ggt gac att tcg gaa cga	1749
Ala Ala Lys Met Ala Gln Glu Lys Ser Phe Gly Asp Ile Ser Glu Arg	
450 455 460 465	
ctg cag ctg agg gaa caa ctg cac tgt cac aac ttt tcc tgg tac ctg	1797
Leu Gln Leu Arg Glu Gln Leu His Cys His Asn Phe Ser Trp Tyr Leu	
466 471 476 481	
cac aat gtc tac cca gag atg ttt gtt cct gac ctg acg ccc acc ttc	1845
His Asn Val Tyr Pro Glu Met Phe Val Pro Asp Leu Thr Pro Thr Phe	
482 487 492 497	
tat ggt gcc atc aag aac ctc ggc acc aac caa tgc ctg gat gtg ggt	1893
Tyr Gly Ala Ile Lys Asn Leu Gly Thr Asn Gln Cys Leu Asp Val Gly	
498 503 508 513	
gag aac aac cgc ggg ggg aag ccc ctc atc atg tac tcc tgc cac ggc	1941
Glu Asn Asn Arg Gly Gly Lys Pro Leu Ile Met Tyr Ser Cys His Gly	
514 519 524 529	
ctt ggc ggc aac cag tac ttt gag tac aca act cag agg gac ctt cgc	1989
Leu Gly Gly Asn Gln Tyr Phe Glu Tyr Thr Thr Gln Arg Asp Leu Arg	
530 535 540 545	
cac aac atc gca aag cag ctg tgt cta cat gtc agc aag ggt gct ctg	2037
His Asn Ile Ala Lys Gln Leu Cys Leu His Val Ser Lys Gly Ala Leu	
546 551 556 561	
ggc ctt ggg agc tgt cac ttc act ggc aag aat agc cag gtc ccc aag	2085

gtgagagagt tagaggaaaa actggttagag agggagaaaag gtacagtgat taagccacct 300

gtggaagagt acgaggaaat gaaaagttca tattgctctg ttattgagaa tatgaataag 360

gagaaagcat ttttgtttga gaaataccaa gaagcccaag aagaaatcat gtaattaaaa 420

gacacactaa aaagtcagat gacacaggaa gccagtgatg aagctgagga catgaaagaa 480

gccatgaata gg atg ata gat gaa ctc aat aaa cag gtg agc gag ctg 528
Met Ile Asp Glu Leu Asn Lys Gln Val Ser Glu Leu
1 5 10

tca cag ctg tac aaa gaa gcc cag gct gag ctg gag gat tac agg aag 576
Ser Gln Leu Tyr Lys Glu Ala Gln Ala Glu Leu Glu Asp Tyr Arg Lys
13 18 23 28

agg aaa tct cta gag gat gtc aca gct gaa tat atc cat aaa gca gag 624
Arg Lys Ser Leu Glu Asp Val Thr Ala Glu Tyr Ile His Lys Ala Glu
29 34 39 44

cat gag aaa ctg atg caa ttg aca aac gtg tcc agg gct aaa gca gaa 672
His Glu Lys Leu Met Gln Leu Thr Asn Val Ser Arg Ala Lys Ala Glu
45 50 55 60

gat gca ctg tct gaa atg aag tct cag tat tca aaa gtg ttg aat gag 720
Asp Ala Leu Ser Glu Met Lys Ser Gln Tyr Ser Lys Val Leu Asn Glu
61 66 71 76

ttg acc cag ctc aaa caa ctg gtg gat gca caa aaa gag aac tct gtc 768
Leu Thr Gln Leu Lys Gln Leu Val Asp Ala Gln Lys Glu Asn Ser Val
77 82 87 92

tct atc aca gaa cat ttg caa gtg ata acc acg ctg cgg act gca gca 816
Ser Ile Thr Glu His Leu Gln Val Ile Thr Thr Leu Arg Thr Ala Ala
93 98 103 108

aaa gag atg gaa gaa aaa ata agc aat ctt aag gaa cac ctt gca agc 864
Lys Glu Met Glu Glu Lys Ile Ser Asn Leu Lys Glu His Leu Ala Ser
109 114 119 124

aag gaa gtg gaa gta gca aag ctg gag aaa caa ctc tta gaa gag aaa 912
Lys Glu Val Glu Val Ala Lys Leu Glu Lys Gln Leu Leu Glu Glu Lys
125 130 135 140

gct gct atg act gat gca atg gta cct cgg tct tcc tat gaa aaa ctc 960
Ala Ala Met Thr Asp Ala Met Val Pro Arg Ser Ser Tyr Glu Lys Leu
141 146 151 156

cag tca tcc tta gag agt gaa gtg agt gtg ttg gca tcg aaa tta aag 1008
Gln Ser Ser Leu Glu Ser Glu Val Ser Val Leu Ala Ser Lys Leu Lys
157 162 167 172

gaa tct gtg aaa gag aaa gag aag gtc cat tca gag gtt gtc cag att 1056
Glu Ser Val Lys Glu Lys Glu Lys Val His Ser Glu Val Val Gln Ile
173 178 183 188

aga agt gag gtc tca cag gtg aaa aga gaa aag gaa aat att cag act	1104
Arg Ser Glu Val Ser Gln Val Lys Arg Glu Lys Glu Asn Ile Gln Thr	
189 194 199 204	
ctc ttg aaa tcc aaa gag caa gaa gta aat gaa ctt ctg caa aaa ttc	1152
Leu Leu Lys Ser Lys Glu Gln Glu Val Asn Glu Leu Leu Gln Lys Phe	
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Gln Gln Ala Gln Glu Glu Leu Ala Glu Met Lys Arg Tyr Ser Glu Ser	
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tct tca aaa ctg gag gaa gat aaa gat aaa aag ata aat gag atg tcg	1248
Ser Ser Lys Leu Glu Glu Asp Lys Asp Lys Lys Ile Asn Glu Met Ser	
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aag gaa gtc acc aaa ttg aag gag gcc ttg aac agc ctc tcc cag ctc	1296
Lys Glu Val Thr Lys Leu Lys Glu Ala Leu Asn Ser Leu Ser Gln Leu	
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Ser Tyr Ser Thr Ser Ser Ser Lys Arg Gln Ser Gln Gln Leu Glu Ala	
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Leu Gln Gln Gln Val Lys Gln Leu Gln Asn Gln Leu Ala Glu Cys Lys	
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Lys Gln His Gln Glu Val Ile Ser Val Tyr Arg Met His Leu Leu Tyr	
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Ala Val Gln Gly Gln Met Asp Glu Asp Val Gln Lys Val Leu Lys Gln	
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Ile Leu Thr Met Cys Lys Asn Gln Ser Gln Lys Lys *	
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ctgcectgect tcacctcct ccagtgcctc cagtactggg cgtgagtcgg gaagtggcca 180

caaccagacc tggaccgtcg cttataaagc tgtgtaaacc tgtataagct caggcggtga 240

cagctggaag gcagctggca ctggcagccc ccttcattgc acctatctcc cccatctcat 300

tgccacgggt gaacctcct tctcaatctt ggaacagcac ccccttcttt aaggtgaagc 360

tcccccgca gaaggaagtg atcacatcgg atgagctc atg gcc cat ctt gga 413
Met Ala His Leu Gly
1

aac tgc ctc ctg tcc atc aag ccc cag gag aag tca gag gga ctt cag 461
Asn Cys Leu Leu Ser Ile Lys Pro Gln Glu Lys Ser Glu Gly Leu Gln
6 11 16 21

ctt aat ttt cag cag aat gtg gat gat gca atg aca gtg ctg cct aaa 509
Leu Asn Phe Gln Gln Asn Val Asp Asp Ala Met Thr Val Leu Pro Lys
22 27 32 37

ctg gcc aca ggt ctg gat gtc aat gtg cga ttc aca ggc gtc tct gat 557
Leu Ala Thr Gly Leu Asp Val Asn Val Arg Phe Thr Gly Val Ser Asp
38 43 48 53

ttt gag tat aca ccc gag tgc agt gtc ttt gac ctg cta ggc ata cct 605
Phe Glu Tyr Thr Pro Glu Cys Ser Val Phe Asp Leu Leu Gly Ile Pro
54 59 64 69

ctg tac cat ggc tgg ctt gtt gat cca cag cag agt cct gag gct gcg 653
Leu Tyr His Gly Trp Leu Val Asp Pro Gln Gln Ser Pro Glu Ala Ala
70 75 80 85

cgt gca gtt ggg aaa ctg agt tac aac cag ctg gtg gag agg atc atc 701
Arg Ala Val Gly Lys Leu Ser Tyr Asn Gln Leu Val Glu Arg Ile Ile
86 91 96 101

acc tgc aaa cac tcc agt gac acc aac ctc gtg aca gaa ggc ctg att 749
Thr Cys Lys His Ser Ser Asp Thr Asn Leu Val Thr Glu Gly Leu Ile
102 107 112 117

gca gag cag ttc ctg gag acc acc gcg gcc cat ctg acc tac cac gga 797
Ala Glu Gln Phe Leu Glu Thr Thr Ala Ala His Leu Thr Tyr His Gly
118 123 128 133

ctg tgt gag ctg aca gca gct gct aag gag ggt gaa ctt agc gtc ttt 845
Leu Cys Glu Leu Thr Ala Ala Ala Lys Glu Gly Glu Leu Ser Val Phe
134 139 144 149

ttc cga aac aac cac ttt agc acc atg act aag cat aag agt cac tta 893
Phe Arg Asn Asn His Phe Ser Thr Met Thr Lys His Lys Ser His Leu
150 155 160 165

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Tyr Leu Leu Val Thr Asp Gln Gly Phe Leu Gln Glu Glu Gln Val Val	
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Trp Glu Ser Leu His Asn Val Asp Gly Asp Ser Cys Phe Cys Asp Ser	
182 187 192 197	
gac ttt cac ctg agt cat tcc ctg ggc aag ggg cct gga gca gaa ggt	1037
Asp Phe His Leu Ser His Ser Leu Gly Lys Gly Pro Gly Ala Glu Gly	
198 203 208 213	
ggg agt ggc tcc cca gaa aag cag ctg cag gta gac cag gac tac ctg	1085
Gly Ser Gly Ser Pro Glu Lys Gln Leu Gln Val Asp Gln Asp Tyr Leu	
214 219 224 229	
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Ile Ala Leu Ser Leu Gln Gln Gln Gln Pro Arg Gly Pro Leu Gly Leu	
230 235 240 245	
acc gac ttg gag ctg gcc cag cag ctt cag caa gag gag tat caa cag	1181
Thr Asp Leu Glu Leu Ala Gln Gln Leu Gln Gln Glu Glu Tyr Gln Gln	
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Gln Gln Ala Ala Gln Pro Val Arg Met Arg Thr Arg Val Leu Ser Leu	
262 267 272 277	
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Gln Gly Arg Gly Ala Thr Ser Gly Arg Pro Ala Gly Glu Arg Arg Gln	
278 283 288 293	
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Arg Pro Lys His Glu Ser Asp Cys Ile Leu Leu *	
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agc gta gct gag ggg gtg cgg cta agt cca gag cct ggc agg gag gga	96
Ser Val Ala Glu Gly Val Arg Leu Ser Pro Glu Pro Gly Arg Glu Gly	
17 22 27 32	
gta agg gac tta gca ggg gcg gag gag ttc ggc ggc gga gag gag ggg	144
Val Arg Asp Leu Ala Gly Ala Glu Glu Phe Gly Gly Gly Glu Glu Gly	
33 38 43 48	
aca ggg ctg aca ggg ata aag gag ata ggg gat gga gag gaa gga agt	192
Thr Gly Leu Thr Gly Ile Lys Glu Ile Gly Asp Gly Glu Glu Gly Ser	
49 54 59 64	
gga caa agg cca gag gaa ata ccg atg gac cta acg gta gtg aag cag	240
Gly Gln Arg Pro Glu Glu Ile Pro Met Asp Leu Thr Val Val Lys Gln	
65 70 75 80	
gaa att ata gac tgg cca ggt aca gaa ggc agg ttg gct ggc cag tgg	288
Glu Ile Ile Asp Trp Pro Gly Thr Glu Gly Arg Leu Ala Gly Gln Trp	
81 86 91 96	
gta gaa cag gag gtg gag gat agg cct gag gtg aag gat gag aac gca	336
Val Glu Gln Glu Val Glu Asp Arg Pro Glu Val Lys Asp Glu Asn Ala	
97 102 107 112	
ggc gta ttg gag gtg aag cag gag acg gat agt agt tta gtg gta aaa	384
Gly Val Leu Glu Val Lys Gln Glu Thr Asp Ser Ser Leu Val Val Lys	
113 118 123 128	
gaa gcg aag gtg ggt gaa cca gag gta aag gaa gag aag gta aag gaa	432
Glu Ala Lys Val Gly Glu Pro Glu Val Lys Glu Glu Lys Val Lys Glu	
129 134 139 144	
gag gta atg gac tgg tca gaa gtg aag gaa gag aag gat aac ttg gag	480
Glu Val Met Asp Trp Ser Glu Val Lys Glu Glu Lys Asp Asn Leu Glu	
145 150 155 160	
ata aaa cag gag gag aag ttt gtt ggt caa tgc ata aaa gag gaa ttg	528
Ile Lys Gln Glu Glu Lys Phe Val Gly Gln Cys Ile Lys Glu Glu Leu	
161 166 171 176	
atg cat gga gag tgt gta aaa gaa gag aag gat ttc ctg aag aaa gaa	576
Met His Gly Glu Cys Val Lys Glu Glu Lys Asp Phe Leu Lys Lys Glu	
177 182 187 192	
atc gtg gat gat aca aag gtg aaa gaa gag cct ccg ata aat cac ccg	624

Ile Val Asp Asp Thr Lys Val Lys Glu Glu Pro Pro Ile Asn His Pro	
193 198 203 208	
gtg ggc tgc aag cgg aaa ctg gcc atg tca agg tgt gag act tgt ggt	672
Val Gly Cys Lys Arg Lys Leu Ala Met Ser Arg Cys Glu Thr Cys Gly	
209 214 219 224	
aca gaa gaa gca aag tac aga tgt cca cgt tgt atg cga tat tcc tgc	720
Thr Glu Glu Ala Lys Tyr Arg Cys Pro Arg Cys Met Arg Tyr Ser Cys	
225 230 235 240	
agt ttg ccc tgt gta aag aaa cac aaa gca gaa ctg aca tgt aat gga	768
Ser Leu Pro Cys Val Lys Lys His Lys Ala Glu Leu Thr Cys Asn Gly	
241 246 251 256	
gtt cga gat aaa act gca tac att tca ata caa cag ttt act gaa atg	816
Val Arg Asp Lys Thr Ala Tyr Ile Ser Ile Gln Gln Phe Thr Glu Met	
257 262 267 272	
aat ctc cta agt gat tat cga ttt ttg gaa gat gtg gca aga aca gcg	864
Asn Leu Leu Ser Asp Tyr Arg Phe Leu Glu Asp Val Ala Arg Thr Ala	
273 278 283 288	
gac cat att tct aga gat gct ttt ttg aag aga cca ata agc aat aaa	912
Asp His Ile Ser Arg Asp Ala Phe Leu Lys Arg Pro Ile Ser Asn Lys	
289 294 299 304	
tat atg tac ttt atg aaa aat cgt gcc cgg agg caa ggt att aac tta	960
Tyr Met Tyr Phe Met Lys Asn Arg Ala Arg Arg Gln Gly Ile Asn Leu	
305 310 315 320	
aaa ctt cta ccc aat gga ttc acc aag agg aag gag aat tca acc ttt	1008
Lys Leu Leu Pro Asn Gly Phe Thr Lys Arg Lys Glu Asn Ser Thr Phe	
321 326 331 336	
ttt gat aag aaa aaa caa cag ttt tgt tgg cat gtg aag ctc cag ttt	1056
Phe Asp Lys Lys Lys Gln Gln Phe Cys Trp His Val Lys Leu Gln Phe	
337 342 347 352	
cct caa agt caa gct gag tac ata gaa aaa aga gta cca gat gat aaa	1104
Pro Gln Ser Gln Ala Glu Tyr Ile Glu Lys Arg Val Pro Asp Asp Lys	
353 358 363 368	
act att aat gaa atc cta aaa cct tac att gat cct gaa aag tct gat	1152
Thr Ile Asn Glu Ile Leu Lys Pro Tyr Ile Asp Pro Glu Lys Ser Asp	
369 374 379 384	
cct gta att cgt caa agg ttg aaa gcc tac att cgc tct cag act ggg	1200
Pro Val Ile Arg Gln Arg Leu Lys Ala Tyr Ile Arg Ser Gln Thr Gly	
385 390 395 400	
gtt cag att tta atg aag att gaa tat atg cag caa aat tta gta aga	1248
Val Gln Ile Leu Met Lys Ile Glu Tyr Met Gln Gln Asn Leu Val Arg	
401 406 411 416	
tat tat gaa cta gat cct tat aaa agt ctc cta gac aat ttg agg aac	1296
Tyr Tyr Glu Leu Asp Pro Tyr Lys Ser Leu Leu Asp Asn Leu Arg Asn	

417	422	427	432	
aaa gtg atc att gag tat cca aca tta cat gtg gta ttg aaa gga tcc				1344
Lys Val Ile Ile Glu Tyr Pro Thr Leu His Val Val Leu Lys Gly Ser				
433	438	443	448	
aat aat gac atg aaa gtt ctt cac caa gtg aag agt gaa tct acc aag				1392
Asn Asn Asp Met Lys Val Leu His Gln Val Lys Ser Glu Ser Thr Lys				
449	454	459	464	
aac gtt ggc aat gaa aat tga gc attttttctg gaagaagaaa gtgaaaactt				1445
Asn Val Gly Asn Glu Asn *				
465	470			
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gaccttcttg gtgctagagc gaagcagcgc gcaactggtgg ctggcgcgcg gggcgcgcag	180
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ccctgcccc cccaaggcct ggagcaggat gtcctccagg ccattgaccg ggccatcgag	300
gctgtacaca acacagcc atg cgg gat ggt ggc aag tac agc ctg gaa cag	351
Met Arg Asp Gly Gly Lys Tyr Ser Leu Glu Gln	

1

5

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Arg Gly Val Leu Gln Lys Leu Ile His His Arg Lys Glu Thr Leu Ser	
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cgc aga ggc cct tca gcc tcc agt gtt gca gtt atg acc tca tca acc	447
Arg Arg Gly Pro Ser Ala Ser Ser Val Ala Val Met Thr Ser Ser Thr	
28 33 38 43	
agt gac cac cac ttg gat gct gct gca gcc agg cag ccc aat ggg gtg	495
Ser Asp His His Leu Asp Ala Ala Ala Ala Arg Gln Pro Asn Gly Val	
44 49 54 59	
tgt cga gct ggg ttc gag cgg cag cac agc cta ccc agt tct gag cat	543
Cys Arg Ala Gly Phe Glu Arg Gln His Ser Leu Pro Ser Ser Glu His	
60 65 70 75	
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Leu Gly Ala Asp Gly Gly Leu Tyr Gln Ile Pro Leu Pro Ser Ser Gln	
76 81 86 91	
atc cca cca cag cct cgc cga gca gca ccc acc aca ccg ccc cca cca	639
Ile Pro Pro Gln Pro Arg Arg Ala Ala Pro Thr Thr Pro Pro Pro Pro	
92 97 102 107	
gtg aag cgc cga gac cgc gag gcc ctg atg gcc tct ggg agt ggt ggc	687
Val Lys Arg Arg Asp Arg Glu Ala Leu Met Ala Ser Gly Ser Gly Gly	
108 113 118 123	
cac aac acc atg ccc tcc ggg ggt aac tct gtg tcc agc ggc tcc tca	735
His Asn Thr Met Pro Ser Gly Gly Asn Ser Val Ser Ser Gly Ser Ser	
124 129 134 139	
gtc agc agc acc tcc ctg gac acg ctc tat acc agc tcc agc cca tct	783
Val Ser Ser Thr Ser Leu Asp Thr Leu Tyr Thr Ser Ser Ser Pro Ser	
140 145 150 155	
gaa cca ggc tcc agc tgc tca ccc aca ccc cca cct gtg ccc cgc cga	831
Glu Pro Gly Ser Ser Cys Ser Pro Thr Pro Pro Pro Val Pro Arg Arg	
156 161 166 171	
ggc acc cac acc acc gtg tcc caa gtc cag ccc cct ccc tcc aag gca	879
Gly Thr His Thr Thr Val Ser Gln Val Gln Pro Pro Pro Ser Lys Ala	
172 177 182 187	
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Ser Ala Pro Glu Pro Pro Ala Glu Glu Glu Val Ala Thr Gly Thr Thr	
188 193 198 203	
tca gcc tct gat gac ctg gaa gcc ctg ggt aca ctg agc ctg ggg acc	975
Ser Ala Ser Asp Asp Leu Glu Ala Leu Gly Thr Leu Ser Leu Gly Thr	
204 209 214 219	
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Thr Glu Glu Lys Ala Ala Ala Glu Ala Ala Val Pro Arg Thr Ile Gly	
220 225 230 235	

gcc gag ctg atg gag ctg gtg cgg aga aac act ggc ctg agc cac gaa	1071
Ala Glu Leu Met Glu Leu Val Arg Arg Asn Thr Gly Leu Ser His Glu	
236 241 246 251	
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Leu Cys Arg Val Ala Ile Gly Ile Ile Val Gly His Ile Gln Ala Ser	
252 257 262 267	
gtg ccg gcc agc tca cca gtc atg gag cag gtc ctc ctc tca ctc gta	1167
Val Pro Ala Ser Ser Pro Val Met Glu Gln Val Leu Leu Ser Leu Val	
268 273 278 283	
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Glu Gly Lys Asp Leu Ser Met Ala Leu Pro Ser Gly Gln Val Cys His	
284 289 294 299	
gac cag cag agg ctg gag gtg atc ttt gca gac ctg gct cgc cgg aag	1263
Asp Gln Gln Arg Leu Glu Val Ile Phe Ala Asp Leu Ala Arg Arg Lys	
300 305 310 315	
gac gac gcc cag cag cgc agt tgg gca cta tat gag gat gag ggt gtc	1311
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316 321 326 331	
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Ile Arg Cys Tyr Leu Glu Glu Leu Leu His Ile Leu Thr Asp Ala Asp	
332 337 342 347	
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Pro Glu Val Cys Lys Lys Met Cys Lys Arg Asn Glu Phe Glu Ser Val	
348 353 358 363	
ctg gcc ttg gtg gcc tat tac caa atg gaa cac cga gca tca ctg cgg	1455
Leu Ala Leu Val Ala Tyr Tyr Gln Met Glu His Arg Ala Ser Leu Arg	
364 369 374 379	
ctg ctg ctc ctc aag tgc ttt ggc gcc atg tgc agc ctg gat gca gcc	1503
Leu Leu Leu Leu Lys Cys Phe Gly Ala Met Cys Ser Leu Asp Ala Ala	
380 385 390 395	
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Ile Ile Ser Thr Leu Val Ser Ser Val Leu Pro Val Glu Leu Ala Arg	
396 401 406 411	
gac atg cag aca gac acg cag gac cac cag aaa ctc tgt tac tct gcc	1599
Asp Met Gln Thr Asp Thr Gln Asp His Gln Lys Leu Cys Tyr Ser Ala	
412 417 422 427	
ctc atc ctg gcc atg gtc ttc tcc atg gga gag gca gtg ccc tat gca	1647
Leu Ile Leu Ala Met Val Phe Ser Met Gly Glu Ala Val Pro Tyr Ala	
428 433 438 443	
cac tat gag cac ctg ggc acg cct ttc gcc cag ttc cta ctg aac atc	1695
His Tyr Glu His Leu Gly Thr Pro Phe Ala Gln Phe Leu Leu Asn Ile	
444 449 454 459	

gtc gag gat ggg ctg ccc ttg gac acc aca gag cag ctg ccg gac ctc	1743
Val Glu Asp Gly Leu Pro Leu Asp Thr Thr Glu Gln Leu Pro Asp Leu	
460 465 470 475	
tgc gtg aac ctg ctt ctg gct ctc aac ctg cac ctg cca gct gct gac	1791
Cys Val Asn Leu Leu Leu Ala Leu Asn Leu His Leu Pro Ala Ala Asp	
476 481 486 491	
cag aat gtc atc atg gct gcc ctg agc aaa cac gcc aat gtc aag atc	1839
Gln Asn Val Ile Met Ala Ala Leu Ser Lys His Ala Asn Val Lys Ile	
492 497 502 507	
ttc tcc gag aag ctg ttg ttg ctc ctg aac aga ggg gat gac cct gtg	1887
Phe Ser Glu Lys Leu Leu Leu Leu Leu Asn Arg Gly Asp Asp Pro Val	
508 513 518 523	
cgc atc ttc aaa cat gag cca cag cca cca cac tct gtc ctc aag ttc	1935
Arg Ile Phe Lys His Glu Pro Gln Pro Pro His Ser Val Leu Lys Phe	
524 529 534 539	
ctg cag gac gtg ttt ggc agc ccg gcc aca gct gcc atc ttc tac cac	1983
Leu Gln Asp Val Phe Gly Ser Pro Ala Thr Ala Ala Ile Phe Tyr His	
540 545 550 555	
aca gac atg atg gct ctc att gac atc act gtg cgg cac atc gca gac	2031
Thr Asp Met Met Ala Leu Ile Asp Ile Thr Val Arg His Ile Ala Asp	
556 561 566 571	
ctg tca cca gga gac aag ctg cgc atg gag tac ctc tcc ctg atg cat	2079
Leu Ser Pro Gly Asp Lys Leu Arg Met Glu Tyr Leu Ser Leu Met His	
572 577 582 587	
gct ata gtc cgc acc aca ccc tac ctg cag cac cgc cac cgg cta ccc	2127
Ala Ile Val Arg Thr Thr Pro Tyr Leu Gln His Arg His Arg Leu Pro	
588 593 598 603	
gac ctg cag gcc ata ctg cga cgc atc ctg aat gag gag gag acc tca	2175
Asp Leu Gln Ala Ile Leu Arg Arg Ile Leu Asn Glu Glu Glu Thr Ser	
604 609 614 619	
ccc cag tgc cag atg gac cgc atg att gtc cga gag atg tgc aag gaa	2223
Pro Gln Cys Gln Met Asp Arg Met Ile Val Arg Glu Met Cys Lys Glu	
620 625 630 635	
ttc ctg gtg ctg ggg gag gct ccc agc tag c accttgctgt cctcccttcc	2274
Phe Leu Val Leu Gly Glu Ala Pro Ser *	
636 641	
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gacagtggga ggggataagg tggcagaagg aacctgagca ggacccccac ctgaagtaga	2394
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 Met Leu Lys Ser Met
 1
 gtt ctg tgg tta gga gaa cag gta caa agc ttg cag ttg cag cag caa 163
 Val Leu Trp Leu Gly Glu Gln Val Gln Ser Leu Gln Leu Gln Gln
 6 11 16 21
 ttg cgt cat cat ttt aat cac att cat att tgc gta act aac tca gaa 211
 Leu Arg His His Phe Asn His Ile His Ile Cys Val Thr Asn Ser Glu
 22 27 32 37
 tat aac caa agt gag tat ccg tgg gac ctt gtg aaa gcc cat ttg caa 259
 Tyr Asn Gln Ser Glu Tyr Pro Trp Asp Leu Val Lys Ala His Leu Gln
 38 43 48 53
 gga gct ttc aca tcc aac atc acc ttt gat att agt gaa tta caa aac 307
 Gly Ala Phe Thr Ser Asn Ile Thr Phe Asp Ile Ser Glu Leu Gln Asn
 54 59 64 69
 aaa att ctt gat tta aat agg cac act caa gaa ttt cag cct tct tta 355
 Lys Ile Leu Asp Leu Asn Arg His Thr Gln Glu Phe Gln Pro Ser Leu
 70 75 80 85
 gaa gac tgg act gaa ttc cag gaa ggc ctg gag agc ctc aac cct tgg 403
 Glu Asp Trp Thr Glu Phe Gln Glu Gly Leu Glu Ser Leu Asn Pro Trp
 86 91 96 101

acc tat cta aag tac cac agt aac atc tta tat gta gtt ctt gga gta 451
 Thr Tyr Leu Lys Tyr His Ser Asn Ile Leu Tyr Val Val Leu Gly Val
 102 107 112 117

atg ttg ttt tgt ctc tgt ctt ctg ttt ata gtc tgt aaa atc gga tgg 499
 Met Leu Phe Cys Leu Cys Leu Leu Phe Ile Val Cys Lys Ile Gly Trp
 118 123 128 133

acc gcc aat cgg aga atg aga gct gcc cag cct ggt ctt aca ttc ttt 547
 Thr Ala Asn Arg Arg Met Arg Ala Ala Gln Pro Gly Leu Thr Phe Phe
 134 139 144 149

caa tta att cat aaa cag ggg gat atg cag gga gcc gaa ggc cca tgg 595
 Gln Leu Ile His Lys Gln Gly Asp Met Gln Gly Ala Glu Gly Pro Trp
 150 155 160 165

gac gtg acc aac tca gca ttc cac tgg agg cta tat gat caa aca gca 643
 Asp Val Thr Asn Ser Ala Phe His Trp Arg Leu Tyr Asp Gln Thr Ala
 166 171 176 181

aac tgt tta tca tga 658
 Asn Cys Leu Ser *
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cggcagcagc ggcagcggct atggtgtggt cgctcgattc tcccagtgcc tggctgagtt 180

tccgacgtgg ttaagaacca actggttgag gttcaatgca gacaagacgg atgtgatgct 240

gtagaaaatg tgcattcag atg ttt atg ttt aat tgg ttt aca gac tgt ctg 291
 Met Phe Met Phe Asn Trp Phe Thr Asp Cys Leu
 1 5

tgg act ctt ttc ctg tca aat tac cag cca tct gtt gaa tct tca agt 339
 Trp Thr Leu Phe Leu Ser Asn Tyr Gln Pro Ser Val Glu Ser Ser Ser
 12 17 22 27

cca gga ggt tca gca aca tca gat gac cat gaa ttt gat cca tca gct 387
 Pro Gly Gly Ser Ala Thr Ser Asp Asp His Glu Phe Asp Pro Ser Ala

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Asp Met Leu Val His Asp Phe Asp Asp Glu Arg Thr Leu Glu Glu Glu				
44	49	54	59	
gaa atg atg gaa gga gaa aca aac ttc agc tct gaa ata gaa gat ctt				483
Glu Met Met Glu Gly Glu Thr Asn Phe Ser Ser Glu Ile Glu Asp Leu				
60	65	70	75	
gca agg gaa ggc gac atg cca att cat gaa ctt ctc agc ctt tat ggt				531
Ala Arg Glu Gly Asp Met Pro Ile His Glu Leu Leu Ser Leu Tyr Gly				
76	81	86	91	
tat ggt agt act gtt cga cta cct gaa gaa gat gag gaa gag gaa gaa				579
Tyr Gly Ser Thr Val Arg Leu Pro Glu Glu Asp Glu Glu Glu Glu Glu				
92	97	102	107	
gag gaa gaa gaa ggt gaa gat gat gaa gat gct gat aat gat gac aac				627
Glu Glu Glu Glu Gly Glu Asp Asp Glu Asp Ala Asp Asn Asp Asp Asn				
108	113	118	123	
agt ggc tgt agt ggg gaa aat aaa gag gag aat ata aag gat tca tca				675
Ser Gly Cys Ser Gly Glu Asn Lys Glu Glu Asn Ile Lys Asp Ser Ser				
124	129	134	139	
ggt cag gag gat gaa act cag tct tcc aat gat gat cca tca caa tct				723
Gly Gln Glu Asp Glu Thr Gln Ser Ser Asn Asp Asp Pro Ser Gln Ser				
140	145	150	155	
gtt gct tct caa gat gcc cag gaa ata atc cgc cca cgt cga tgt aaa				771
Val Ala Ser Gln Asp Ala Gln Glu Ile Ile Arg Pro Arg Arg Cys Lys				
156	161	166	171	
tat ttt gat aca aat agt gaa gta gaa gaa gaa tct gaa gaa gat gaa				819
Tyr Phe Asp Thr Asn Ser Glu Val Glu Glu Glu Ser Glu Glu Asp Glu				
172	177	182	187	
gat tat att cca tca gaa gac tgg aaa aag gag att atg gtg ggc tcc				867
Asp Tyr Ile Pro Ser Glu Asp Trp Lys Lys Glu Ile Met Val Gly Ser				
188	193	198	203	
atg ttt caa gca gaa att cca gtt ggc att tgt aga tac aaa gaa aat				915
Met Phe Gln Ala Glu Ile Pro Val Gly Ile Cys Arg Tyr Lys Glu Asn				
204	209	214	219	
gaa aaa gta tat gaa aat gat gat cag ctc ctg tgg gac cct gag tac				963
Glu Lys Val Tyr Glu Asn Asp Asp Gln Leu Leu Trp Asp Pro Glu Tyr				
220	225	230	235	
tta cca gaa gat aaa gtg att ata ttt ctt aaa gat gca tct aga aga				1011
Leu Pro Glu Asp Lys Val Ile Ile Phe Leu Lys Asp Ala Ser Arg Arg				
236	241	246	251	
aca ggt gat gag aag ggt gta gaa gca att cct gaa gga tct cac ata				1059
Thr Gly Asp Glu Lys Gly Val Glu Ala Ile Pro Glu Gly Ser His Ile				
252	257	262	267	

aaa gac aat gaa cag gct tta tat gaa ttg gtt aaa tgc aat ttt gat	1107
Lys Asp Asn Glu Gln Ala Leu Tyr Glu Leu Val Lys Cys Asn Phe Asp	
268 273 278 283	
aca gaa gaa gca ttg aga aga tta aga ttt aat gta aaa gca gct aga	1155
Thr Glu Glu Ala Leu Arg Arg Leu Arg Phe Asn Val Lys Ala Ala Arg	
284 289 294 299	
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Glu Glu Leu Ser Val Trp Thr Glu Glu Glu Cys Arg Asn Phe Glu Gln	
300 305 310 315	
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Gly Leu Lys Ala Tyr Gly Lys Asp Phe His Leu Ile Gln Ala Asn Lys	
316 321 326 331	
gtc cga aca agg tca gtt ggt gaa tgt gta gca ttc tat tac atg tgg	1299
Val Arg Thr Arg Ser Val Gly Glu Cys Val Ala Phe Tyr Tyr Met Trp	
332 337 342 347	
aaa aaa tct gaa cgt tat gat ttc ttt gct cag caa aca cga ttt gga	1347
Lys Lys Ser Glu Arg Tyr Asp Phe Phe Ala Gln Gln Thr Arg Phe Gly	
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aag aag aaa tat aat ctt cat cct ggt gta acg gat tac atg gat cgt	1395
Lys Lys Lys Tyr Asn Leu His Pro Gly Val Thr Asp Tyr Met Asp Arg	
364 369 374 379	
ctt cta gac gaa agt gaa agt gct gca tct agt cga gca caa tcc cct	1443
Leu Leu Asp Glu Ser Glu Ser Ala Ala Ser Ser Arg Ala Gln Ser Pro	
380 385 390 395	
ccc cca act gca tca aac agt agt aac agc cag tct gag aaa gaa gat	1491
Pro Pro Thr Ala Ser Asn Ser Ser Asn Ser Gln Ser Glu Lys Glu Asp	
396 401 406 411	
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Phe Ser Phe Phe Ile Ile Arg Asp Thr Phe Leu Gln *	
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aagtaatttt aataaagcct actgtcaaca gtgactatctt cttgtaagaa atttgttctt	1768
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1288

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154

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 165 170 175 180

gtc aac agt gac tgc gag acc tac atg tgc gcg gat gac ctg cgc atc 812
 Val Asn Ser Asp Cys Glu Thr Tyr Met Ser Ala Asp Asp Leu Arg Ile
 181 186 191 196

aac ctc tgg cac ctg gcc atc acc gac agg agc ttc aac atc gtg gac 860
 Asn Leu Trp His Leu Ala Ile Thr Asp Arg Ser Phe Asn Ile Val Asp
 197 202 207 212

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 Ile Lys Pro Ala Asn Met Glu Asp Leu Thr Glu Val Ile Thr Ala Ser
 213 218 223 228

gag ttc cat ccg cac cac tgc aac ctc ttc gtc tac agc agc agc aag 956
 Glu Phe His Pro His His Cys Asn Leu Phe Val Tyr Ser Ser Ser Lys
 229 234 239 244

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 Gly Ser Leu Arg Leu Cys Asp Met Arg Ala Ala Leu Cys Asp Lys
 245 250 255 260

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 His Ser Lys Leu Phe Glu Glu Pro Glu Asp Pro Ser Asn Arg Ser Phe
 261 266 271 276

ttc tgc gaa atc atc tcc tcc gtg tcc gac gtg aag ttc agc cac agc 1100
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 309 314 319 324

ctt cgg agc aag ctc tgt tcc ctg tac gag aac gac tgc att ttc gac 1244
 Leu Arg Ser Lys Leu Cys Ser Leu Tyr Glu Asn Asp Cys Ile Phe Asp
 325 330 335 340

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 Lys Phe Glu Cys Ala Trp Asn Gly Ser Asp Ser Val Ile Met Thr Gly
 341 346 351 356

acc tac aac aac ttc ttc cgc atg ttc gat cgg aac acc aag cgg gac 1340
 Thr Tyr Asn Asn Phe Phe Arg Met Phe Asp Arg Asn Thr Lys Arg Asp
 357 362 367 372

gtg acc ctg gag gcc tgc agg gaa agc agc aag ccc cgg gct gtg ctc 1388
 Val Thr Leu Glu Ala Ser Arg Glu Ser Ser Lys Pro Arg Ala Val Leu
 373 378 383 388

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Lys Pro Arg Arg Val Cys Val Gly Gly Lys Arg Arg Arg Asp Asp Ile	
389 394 399 404	
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Ser Val Asp Ser Leu Asp Phe Thr Lys Lys Ile Leu His Thr Ala Trp	
405 410 415 420	
cac ccg gct gag aac atc att gcc att gcc gcc acc aac aac ctg tac	1532
His Pro Ala Glu Asn Ile Ile Ala Ile Ala Ala Thr Asn Asn Leu Tyr	
421 426 431 436	
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Ile Phe Gln Asp Lys Val Asn Ser Asp Met His *	
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 Met Ser Phe Ser Leu Asn Phe Thr Leu Pro Ala Asn Thr
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 acg tcc tct cct gtc aca ggt ggg aaa gaa acg gac tgt ggg ccc tct 218
 Thr Ser Ser Pro Val Thr Gly Gly Lys Glu Thr Asp Cys Gly Pro Ser
 14 19 24 29
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 Leu Gly Leu Ala Ala Gly Ile Pro Leu Leu Val Ala Thr Ala Leu Leu
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 gtg gct tta cta ttt act ttg att cac cga aga aga agc agc att gag 314
 Val Ala Leu Leu Phe Thr Leu Ile His Arg Arg Arg Ser Ser Ile Glu
 46 51 56 61
 gcc atg gag gaa agt gac aga cca tgt gaa att tca gaa att gat gac 362
 Ala Met Glu Glu Ser Asp Arg Pro Cys Glu Ile Ser Glu Ile Asp Asp
 62 67 72 77
 aat ccc aag ata tct gag aat cct agg aga tca ccc aca cat gag aag 410
 Asn Pro Lys Ile Ser Glu Asn Pro Arg Arg Ser Pro Thr His Glu Lys
 78 83 88 93
 aat acg atg gga gca caa gag gcc cac ata tat gtg aag act gta gca 458
 Asn Thr Met Gly Ala Gln Glu Ala His Ile Tyr Val Lys Thr Val Ala
 94 99 104 109
 gga agc gag gaa cct gtg cat gac cgt tac cgt cct act ata gaa atg 506
 Gly Ser Glu Glu Pro Val His Asp Arg Tyr Arg Pro Thr Ile Glu Met
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 ggttgctta ttttgggtgg attactccag gagaggccac cctccagctt tctcttatcc 1991
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 Met Gly Ala His
 1
 ctg gtc cgg cgc tac ctg ggc gat gcc tgg gtg gag ccc gac ccc ctg 164
 Leu Val Arg Arg Tyr Leu Gly Asp Ala Ser Val Glu Pro Asp Pro Leu
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 cag atg cca acc ttc ccg cca gac tac ggc ttc ccc gaa cgc aag gag 212
 Gln Met Pro Thr Phe Pro Pro Asp Tyr Gly Phe Pro Glu Arg Lys Glu
 21 26 31 36
 cgc gag atg gtg gcc aca cag cag gag atg atg gac gcg cag ctg agg 260
 Arg Glu Met Val Ala Thr Gln Gln Glu Met Met Asp Ala Gln Leu Arg
 37 42 47 52
 ctc cag ctg cgg gac tac tgc gcc cac cac ctc atc cgg ctg ctc aag 308
 Leu Gln Leu Arg Asp Tyr Cys Ala His His Leu Ile Arg Leu Leu Lys
 53 58 63 68
 tgc aag cgt gac agc ttc ccc aac ttc ctg gcc tgc aag cag gag cgg 356
 Cys Lys Arg Asp Ser Phe Pro Asn Phe Leu Ala Cys Lys Gln Glu Arg
 69 74 79 84
 cac gac tgg gac tac tgc gag cac cgc gac tat gtg atg cgc atg aag 404
 His Asp Trp Asp Tyr Cys Glu His Arg Asp Tyr Val Met Arg Met Lys
 85 90 95 100
 gag ttt gag cgg gag cgg agg ctg ctc cag cgg aag aag cgg cgg gag 452
 Glu Phe Glu Arg Glu Arg Arg Leu Leu Gln Arg Lys Lys Arg Arg Glu
 101 106 111 116
 aag aag gcg gca gag ttg gcc aaa ggc cag gga ccc ggg gaa gtg gac 500
 Lys Lys Ala Ala Glu Leu Ala Lys Gly Gln Gly Pro Gly Glu Val Asp
 117 122 127 132
 ccc aag gtg gcc ctg tag ggggtg cccccccac cctatggacc agtcaaataa 554
 Pro Lys Val Ala Leu *
 133 138
 aagccttcag gccctcaaa aaaaaaaaaa 583

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 <211> 535
 <212> DNA
 <213> Homo sapiens

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 <222> (105) .. (470)

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 taggtgaccc tcggctgctg cagggatctg cagcgactgc agcc atg ggg gcg cac 116
 Met Gly Ala His
 1
 ctg gtc cgg cgc tac ctg ggc gat gcc tcg gtg gag ccc gac ccc ctg 164
 Leu Val Arg Arg Tyr Leu Gly Asp Ala Ser Val Glu Pro Asp Pro Leu
 5 10 15 20
 cag atg cca acc ttc ccg cca gac tac ggc ttc ccc gaa cgc aag gag 212
 Gln Met Pro Thr Phe Pro Pro Asp Tyr Gly Phe Pro Glu Arg Lys Glu
 21 26 31 36
 cgc gag atg gtg gcc aca cag cag gag atg atg gac gcg ctg ctc aag 260
 Arg Glu Met Val Ala Thr Gln Gln Glu Met Met Asp Ala Leu Leu Lys
 37 42 47 52
 tgc aag cgt gac agc ttc ccc aac ttc ctg gcc tgc aag cag gag cgg 308
 Cys Lys Arg Asp Ser Phe Pro Asn Phe Leu Ala Cys Lys Gln Glu Arg
 53 58 63 68
 cac gac tgg gac tac tgc gag cac cgc gac tat gtg atg cgc atg aag 356
 His Asp Trp Asp Tyr Cys Glu His Arg Asp Tyr Val Met Arg Met Lys
 69 74 79 84
 gag ttt gag cgg gag cgg agg ctg ctc cag cgg aag aag cgg cgg gag 404
 Glu Phe Glu Arg Glu Arg Arg Leu Leu Gln Arg Lys Lys Arg Arg Glu
 85 90 95 100
 aag aag gcg gca gag ttg gcc aaa ggc cag gga ccc ggg gaa gtg gac 452
 Lys Lys Ala Ala Glu Leu Ala Lys Gly Gln Gly Pro Gly Glu Val Asp
 101 106 111 116
 ccc aag gtg gcc ctg tag ggggtg cccccccac cctatggacc agtcaaataa 506
 Pro Lys Val Ala Leu *
 117 122
 aagccttcag gccctcaaa aaaaaaaaaa 535

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<222> (75)..(3800)

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taagggaagc cgtg atg agg gcc gtg ttg acg tgg aga gat aaa gcc gag 110
Met Arg Ala Val Leu Thr Trp Arg Asp Lys Ala Glu
1 5 10
cac tgt ata aat gac atc gca ttt aag cct gat gga act caa ctg att 158
His Cys Ile Asn Asp Ile Ala Phe Lys Pro Asp Gly Thr Gln Leu Ile
13 18 23 28
ttg gct gcc gga agc aga tta ctg gtt tat gac acc tct gat ggc acc 206
Leu Ala Ala Gly Ser Arg Leu Leu Val Tyr Asp Thr Ser Asp Gly Thr
29 34 39 44
tta ctt cag ccc ctc aag gga cac aaa gac act gtg tac tgt gtg gca 254
Leu Leu Gln Pro Leu Lys Gly His Lys Asp Thr Val Tyr Cys Val Ala
45 50 55 60
tat gcg aag gat ggc aag cgc ttt gct tct gga tca gct gac aaa agc 302
Tyr Ala Lys Asp Gly Lys Arg Phe Ala Ser Gly Ser Ala Asp Lys Ser
61 66 71 76
gtt att atc tgg aca tca aaa ctg gaa ggc att ctg aag tac acg cac 350
Val Ile Ile Trp Thr Ser Lys Leu Glu Gly Ile Leu Lys Tyr Thr His
77 82 87 92
aat gat gct ata caa tgt gtc tcc tac aat cct att act cat caa ctg 398
Asn Asp Ala Ile Gln Cys Val Ser Tyr Asn Pro Ile Thr His Gln Leu
93 98 103 108
gca tct tgt tcc tcc agt gac ttt ggg ttg tgg tct cct gaa cag aag 446
Ala Ser Cys Ser Ser Ser Asp Phe Gly Leu Trp Ser Pro Glu Gln Lys
109 114 119 124
tct gtc tcc aaa cac aaa tca agc agc aag atc atc tgc tgc agc tgg 494
Ser Val Ser Lys His Lys Ser Ser Ser Lys Ile Ile Cys Cys Ser Trp
125 130 135 140
aca aat gat ggt cag tac ctg gcg ctg ggg atg ttc aat ggg atc atc 542
Thr Asn Asp Gly Gln Tyr Leu Ala Leu Gly Met Phe Asn Gly Ile Ile
141 146 151 156
agc ata cgg aac aaa aat ggc gag gag aaa gta aag atc gag cgg ccg 590
Ser Ile Arg Asn Lys Asn Gly Glu Glu Lys Val Lys Ile Glu Arg Pro
157 162 167 172
ggg ggc tcc ctc tcg cca ata tgg tcc atc tgc tgg aac cct tca agc 638
Gly Gly Ser Leu Ser Pro Ile Trp Ser Ile Cys Trp Asn Pro Ser Ser
173 178 183 188

cga tgg gag agt ttc tgg atg aac aga gag aat gag gat gcc gag gat	686
Arg Trp Glu Ser Phe Trp Met Asn Arg Glu Asn Glu Asp Ala Glu Asp	
189 194 199 204	
gtc att gtc aac aga tat att cag gaa atc cct tcc act ctg aag tca	734
Val Ile Val Asn Arg Tyr Ile Gln Glu Ile Pro Ser Thr Leu Lys Ser	
205 210 215 220	
gca gtg tac agt agt cag ggt agt gag gca gag gag gaa gaa cca gag	782
Ala Val Tyr Ser Ser Gln Gly Ser Glu Ala Glu Glu Glu Glu Pro Glu	
221 226 231 236	
gaa gag gac gac agt ccc agg gac gac aac tta gag gaa cgt aat gac	830
Glu Glu Asp Asp Ser Pro Arg Asp Asp Asn Leu Glu Glu Arg Asn Asp	
237 242 247 252	
atc ctg gct gtg gct gac tgg gga cag aaa gtt tcc ttc tac cag ctg	878
Ile Leu Ala Val Ala Asp Trp Gly Gln Lys Val Ser Phe Tyr Gln Leu	
253 258 263 268	
agt gga aaa cag att gga aag gat cgg gca ctg aac ttt gac ccc tgc	926
Ser Gly Lys Gln Ile Gly Lys Asp Arg Ala Leu Asn Phe Asp Pro Cys	
269 274 279 284	
tgc atc agc tac ttt act aaa ggc gag tac att ttg ctg ggg ggt tca	974
Cys Ile Ser Tyr Phe Thr Lys Gly Glu Tyr Ile Leu Leu Gly Gly Ser	
285 290 295 300	
gac aag caa gta tct ctt ttc acc aag gat gga gtg cgg ctt ggg act	1022
Asp Lys Gln Val Ser Leu Phe Thr Lys Asp Gly Val Arg Leu Gly Thr	
301 306 311 316	
gtt ggg gag cag aac tcc tgg gtg tgg acg tgt caa gcg aaa ccg gat	1070
Val Gly Glu Gln Asn Ser Trp Val Trp Thr Cys Gln Ala Lys Pro Asp	
317 322 327 332	
tcc aac tat gtg gtg gtc ggc tgc cag gac ggc acc att tcc ttc tac	1118
Ser Asn Tyr Val Val Val Gly Cys Gln Asp Gly Thr Ile Ser Phe Tyr	
333 338 343 348	
cag ctt att ttc agc aca gtc cat ggg ctt tac aag gac cgc tat gcc	1166
Gln Leu Ile Phe Ser Thr Val His Gly Leu Tyr Lys Asp Arg Tyr Ala	
349 354 359 364	
tac agg gat agc atg act gac gtc att gtg cag cac ctg atc act gag	1214
Tyr Arg Asp Ser Met Thr Asp Val Ile Val Gln His Leu Ile Thr Glu	
365 370 375 380	
cag aaa gtt cgg att aaa tgc aaa gag ctt gtc aag aag att gcc atc	1262
Gln Lys Val Arg Ile Lys Cys Lys Glu Leu Val Lys Lys Ile Ala Ile	
381 386 391 396	
tac aga aat cga ttg gct atc caa ctg cca gag aaa atc ctc atc tat	1310
Tyr Arg Asn Arg Leu Ala Ile Gln Leu Pro Glu Lys Ile Leu Ile Tyr	
397 402 407 412	

gag ttg tat tca gag gac tta tca gac atg cat tac cgg gta aag gag Glu Leu Tyr Ser Glu Asp Leu Ser Asp Met His Tyr Arg Val Lys Glu 413 418 423 428	1358
aag att atc aag aag ttt gag tgc aac ctc ctg gtg gtg tgt gcc aat Lys Ile Ile Lys Lys Phe Glu Cys Asn Leu Leu Val Val Cys Ala Asn 429 434 439 444	1406
cac atc atc ctg tgc cag gag aaa cgg ctg cag tgc ctg tcc ttc agc His Ile Ile Leu Cys Gln Glu Lys Arg Leu Gln Cys Leu Ser Phe Ser 445 450 455 460	1454
gga gtg aag gag cgg gag tgg cag atg gag tct ctc att cgt tac atc Gly Val Lys Glu Arg Glu Trp Gln Met Glu Ser Leu Ile Arg Tyr Ile 461 466 471 476	1502
aag gtg atc ggt ggc cct cct gga aga gaa ggc ctc tta gtg ggg ctg Lys Val Ile Gly Gly Pro Pro Gly Arg Glu Gly Leu Leu Val Gly Leu 477 482 487 492	1550
aag aat gga cag atc ctg aag atc ttc gtg gac aat ctc ttt gct atc Lys Asn Gly Gln Ile Leu Lys Ile Phe Val Asp Asn Leu Phe Ala Ile 493 498 503 508	1598
gtc ctg ctg aag cag gcc aca gct gtg cgc tgc ttg gac atg agt gcc Val Leu Leu Lys Gln Ala Thr Ala Val Arg Cys Leu Asp Met Ser Ala 509 514 519 524	1646
tcc cgt aag aag ctg gcc gtg gta gat gaa aat gac act tgc ctg gtg Ser Arg Lys Lys Leu Ala Val Val Asp Glu Asn Asp Thr Cys Leu Val 525 530 535 540	1694
tat gac atc gac acc aag gag ctg ctt ttt cag gaa cca aac gcc aac Tyr Asp Ile Asp Thr Lys Glu Leu Leu Phe Gln Glu Pro Asn Ala Asn 541 546 551 556	1742
agt gta gct tgg aac acc cag tgt gag gac atg ctc tgc ttc tcg gga Ser Val Ala Trp Asn Thr Gln Cys Glu Asp Met Leu Cys Phe Ser Gly 557 562 567 572	1790
gga ggc tac ctc aac atc aaa gcc agc acc ttc cct gtg cac cgg cag Gly Gly Tyr Leu Asn Ile Lys Ala Ser Thr Phe Pro Val His Arg Gln 573 578 583 588	1838
aag ctg cag ggc ttt gtg gtc ggc tac aat ggc tcc aag atc ttc tgc Lys Leu Gln Gly Phe Val Val Gly Tyr Asn Gly Ser Lys Ile Phe Cys 589 594 599 604	1886
ctc cat gtc ttc tcc att tct gcc gtg gag gtg ccg cag tcc gct ccc Leu His Val Phe Ser Ile Ser Ala Val Glu Val Pro Gln Ser Ala Pro 605 610 615 620	1934
atg tac cag tac ctg gat agg aaa ctg ttc aag gaa gcc tac cag att Met Tyr Gln Tyr Leu Asp Arg Lys Leu Phe Lys Glu Ala Tyr Gln Ile 621 626 631 636	1982
gct tgc ttg ggt gtc aca gac act gat tgg cgt gaa ctg gcc atg gaa	2030

Ala 637	Cys	Leu	Gly	Val	Thr 642	Asp	Thr	Asp	Trp	Arg 647	Glu	Leu	Ala	Met	Glu 652	
gcg Ala 653	cta Leu	gaa Glu	ggg Gly	tta Leu	gat Asp 658	ttt Phe	gaa Glu	aca Thr	gca Ala	aag Lys 663	aag Lys	gcc Ala	ttc Phe	atc Ile	aga Arg 668	2078
gta Val 669	caa Gln	gac Asp	ctc Leu	cga Arg	tat Tyr 674	tta Leu	gag Glu	ctc Leu	atc Ile	agc Ser 679	agc Ser	att Ile	gag Glu	gag Glu	agg Arg 684	2126
aag Lys 685	aag Lys	cgg Arg	gga Gly	gag Glu	acc Thr 690	aac Asn	aat Asn	gac Asp	ctg Leu	ttt Phe 695	ctg Leu	gca Ala	gat Asp	gtg Val	ttt Phe 700	2174
tcc Ser 701	tac Tyr	cag Gln	ggg Gly	aag Lys	ttc Phe 706	cat His	gag Glu	gcc Ala	gcc Ala	aaa Lys 711	ctg Leu	tac Tyr	aag Lys	agg Arg	agt Ser 716	2222
ggg Gly 717	cac His	gag Glu	aac Asn	ctc Leu	gcg Ala 722	ctt Leu	gaa Glu	atg Met	tac Tyr	acc Thr 727	gac Asp	ctc Leu	tgc Cys	atg Met	ttt Phe 732	2270
gag Glu 733	tat Tyr	gcc Ala	aag Lys	gat Asp	ttc Phe 738	ctt Leu	gga Gly	tct Ser	gga Gly	gac Asp 743	ccc Pro	aaa Lys	gaa Glu	aca Thr	aag Lys 748	2318
atg Met 749	cta Leu	atc Ile	acc Thr	aaa Lys	cag Gln 754	gct Ala	gac Asp	tgg Trp	gcc Ala	aga Arg 759	aat Asn	atc Ile	aag Lys	gag Glu	ccc Pro 764	2366
aaa Lys 765	gcc Ala	gcc Ala	gtg Val	gag Glu	atg Met 770	tac Tyr	atc Ile	tca Ser	gca Ala	gga Gly 775	gag Glu	cac His	gtc Val	aag Lys	gcc Ala 780	2414
atc Ile 781	gag Glu	atc Ile	tgt Cys	ggg Gly	gac Asp 786	cat His	ggc Gly	tgg Trp	gtt Val	gac Asp 791	atg Met	ttg Leu	atc Ile	gac Asp	atc Ile 796	2462
gcc Ala 797	cgc Arg	aaa Lys	ctg Leu	gac Asp	aag Lys 802	gct Ala	gag Glu	cgc Arg	gag Glu	ccc Pro 807	ctg Leu	ctg Leu	ctg Leu	tgc Cys	gct Ala 812	2510
acc Thr 813	tac Tyr	ctc Leu	aag Lys	aag Lys	ctg Leu 818	gac Asp	agc Ser	cct Pro	ggc Gly	tat Tyr 823	gct Ala	gct Ala	gag Glu	acc Thr	tac Tyr 828	2558
ctg Leu 829	aag Lys	atg Met	ggg Gly	gac Asp	ctc Leu 834	aag Lys	tcc Ser	ctg Leu	gtg Val	cag Gln 839	ctg Leu	cac His	gtg Val	gag Glu	acc Thr 844	2606
cag Gln 845	cgc Arg	tgg Trp	gat Asp	gag Glu	gcc Ala 850	ttt Phe	gct Ala	ttg Leu	ggg Gly	gag Glu 855	aag Lys	cat His	cct Pro	gag Glu	ttt Phe 860	2654
aag Lys	gat Asp	gac Asp	atc Ile	tac Tyr	atg Met	cgc Pro	tat Tyr	gct Ala	cag Gln	tgg Trp	cta Leu	gca Ala	gag Glu	aac Asn	gat Asp	2702

861	866	871	876	
cgc ttt gag gaa gcc	cag aaa gcg ttc cac	aag gct ggg cga cag	aga	2750
Arg Phe Glu Glu Ala	Gln Lys Ala Phe His	Lys Ala Gly Arg Gln	Arg	
877	882	887	892	
gaa gcg gtc cag gtg	ctg gag cag ctc aca	aac aat gcc gtg gcg	gag	2798
Glu Ala Val Gln Val	Leu Glu Gln Leu Thr	Asn Asn Ala Val Ala	Glu	
893	898	903	908	
agc agg ttt aat gat	gct gcc tat tat tac	tgg atg ctg tcc atg	cag	2846
Ser Arg Phe Asn Asp	Ala Ala Tyr Tyr Tyr	Trp Met Leu Ser Met	Gln	
909	914	919	924	
tgc ctc gat ata gct	caa gat cct gcc cag	aag gac aca atg ctt	ggc	2894
Cys Leu Asp Ile Ala	Gln Asp Pro Ala Gln	Lys Asp Thr Met Leu	Gly	
925	930	935	940	
aag ttc tac cac ttc	cag cgt ttg gca gag	ctg tac cat ggt tac	cat	2942
Lys Phe Tyr His Phe	Gln Arg Leu Ala Glu	Leu Tyr His Gly Tyr	His	
941	946	951	956	
gcc atc cat cgc cac	acg gaa gat ccg ttc	agt gtc cat cgt cct	gaa	2990
Ala Ile His Arg His	Thr Glu Asp Pro Phe	Ser Val His Arg Pro	Glu	
957	962	967	972	
act ctt ttc aac atc	tcc agg ttc ctg ctg	cac agc ctg ccc aag	gac	3038
Thr Leu Phe Asn Ile	Ser Arg Phe Leu Leu	His Ser Leu Pro Lys	Asp	
973	978	983	988	
acc ccc tcg ggc atc	tct aaa gtg aaa ata	ctc ttc acc ttg gcc	aag	3086
Thr Pro Ser Gly Ile	Ser Lys Val Lys Ile	Leu Phe Thr Leu Ala	Lys	
989	994	999	1004	
cag agc aag gcc ctc	ggt gcc tac agg ctg	gcc cgg cac gcc tat	gac	3134
Gln Ser Lys Ala Leu	Gly Ala Tyr Arg Leu	Ala Arg His Ala Tyr	Asp	
1005	1010	1015	1020	
aag ctg cgt ggc ctg	tac atc cct gcc aga	ttc caa aag tcc att	gag	3182
Lys Leu Arg Gly Leu	Tyr Ile Pro Ala Arg	Phe Gln Lys Ser Ile	Glu	
1021	1026	1031	1036	
ctg ggt acc ctg acc	atc cgc gcc aag ccc	ttc cac gac agt gag	gag	3230
Leu Gly Thr Leu Thr	Ile Arg Ala Lys Pro	Phe His Asp Ser Glu	Glu	
1037	1042	1047	1052	
ttg gtg ccc ttg tgc	tac cgc tgc tcc acc	aac aac ccg ctg ctc	aac	3278
Leu Val Pro Leu Cys	Tyr Arg Cys Ser Thr	Asn Asn Pro Leu Leu	Asn	
1053	1058	1063	1068	
aac ctg ggc aac gtc	tgc atc aac tgc cgc	cag ccc ttc atc ttc	tcc	3326
Asn Leu Gly Asn Val	Cys Ile Asn Cys Arg	Gln Pro Phe Ile Phe	Ser	
1069	1074	1079	1084	
gcc tct tcc tac gac	gtg cta cac ctg gtt	gag ttc tac ctg gag	gaa	3374
Ala Ser Ser Tyr Asp	Val Leu His Leu Val	Glu Phe Tyr Leu Glu	Glu	
1085	1090	1095	1100	

ggg atc act gat gaa gaa gcc atc tcc ctg atc gac ctg gag gtg ctg	3422
Gly Ile Thr Asp Glu Glu Ala Ile Ser Leu Ile Asp Leu Glu Val Leu	
1101 1106 1111 1116	
aga ccc aag cgg gat gac aga cag cta gag att gca aac aac agc tcc	3470
Arg Pro Lys Arg Asp Asp Arg Gln Leu Glu Ile Ala Asn Asn Ser Ser	
1117 1122 1127 1132	
cag att ctg cgg cta gtg gag acc aag gac tcc atc gga gat gag gac	3518
Gln Ile Leu Arg Leu Val Glu Thr Lys Asp Ser Ile Gly Asp Glu Asp	
1133 1138 1143 1148	
ccg ttc aca gct aag ctg agc ttt gag caa ggt ggc tca gag ttc gtg	3566
Pro Phe Thr Ala Lys Leu Ser Phe Glu Gln Gly Gly Ser Glu Phe Val	
1149 1154 1159 1164	
cca gtg gtg gtg agc cgg ctg gtg ctg cgc tcc atg agc cgc cgg gat	3614
Pro Val Val Val Ser Arg Leu Val Leu Arg Ser Met Ser Arg Arg Asp	
1165 1170 1175 1180	
gtc ctg atc aag cga tgg ccc cca ccc ctg agg tgg caa tac ttc cgc	3662
Val Leu Ile Lys Arg Trp Pro Pro Pro Leu Arg Trp Gln Tyr Phe Arg	
1181 1186 1191 1196	
tca ctg ctg cct gac gcc tcc att acc atg tgc ccc tcc tgc ttc cag	3710
Ser Leu Leu Pro Asp Ala Ser Ile Thr Met Cys Pro Ser Cys Phe Gln	
1197 1202 1207 1212	
atg ttc cat tct gag gac tat gag ttg ctg gtg ctt cag cat ggc tgc	3758
Met Phe His Ser Glu Asp Tyr Glu Leu Leu Val Leu Gln His Gly Cys	
1213 1218 1223 1228	
tgc ccc tac tgc cgc agg tgc aag gat gac cct ggc cca tga ccagcat	3807
Cys Pro Tyr Cys Arg Arg Cys Lys Asp Asp Pro Gly Pro *	
1229 1234 1239	
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aagagttaaa ctgtcaaaaa aaaaaaaaaa	3897

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Met Asn Pro Arg Gly Leu Phe Gln Asp
1 5

ttc aac ccc agt aag gtt ctc atc tac acc tgc ctg ctg ctc ttc tcg	161
Phe Asn Pro Ser Lys Val Leu Ile Tyr Thr Cys Leu Leu Leu Phe Ser	
10 15 20 25	
ggg ctg ctg ccc ctc cgc ctg gac ggc atc atc caa tgg agc tac tgg	209
Gly Leu Leu Pro Leu Arg Leu Asp Gly Ile Ile Gln Trp Ser Tyr Trp	
26 31 36 41	
gcc gtc ttt gcc ccc ata tgg ctg agg aag ctt cta gtc gtc gca ggc	257
Ala Val Phe Ala Pro Ile Trp Leu Arg Lys Leu Leu Val Val Ala Gly	
42 47 52 57	
gcc tcc gtg ggc gcg ggc gtt tgg gcc cgc aac cct cgc tac cgc acc	305
Ala Ser Val Gly Ala Gly Val Trp Ala Arg Asn Pro Arg Tyr Arg Thr	
58 63 68 73	
gag gga gag gcc tgt gtg gag atc aaa gcc atg ctg atc gct gtg ggc	353
Glu Gly Glu Ala Cys Val Glu Ile Lys Ala Met Leu Ile Ala Val Gly	
74 79 84 89	
atc cac ctg ctg ctg ctc atg ttc gaa gtc ctg gtc tgc gac agg gtg	401
Ile His Leu Leu Leu Leu Met Phe Glu Val Leu Val Cys Asp Arg Val	
90 95 100 105	
gag agg ggc acc cac ttc tgg ctg ctg gtc ttc atg cct ctc ttc ttc	449
Glu Arg Gly Thr His Phe Trp Leu Leu Val Phe Met Pro Leu Phe Phe	
106 111 116 121	
gtg tcc ccc gtg tcc gtg gct gcc tgc gtc tgg ggc ttt cga cac gat	497
Val Ser Pro Val Ser Val Ala Ala Cys Val Trp Gly Phe Arg His Asp	
122 127 132 137	
agg tcg ctg gag ctg gag atc ctg tgc tcg gtc aac atc ctg cag ttc	545
Arg Ser Leu Glu Leu Glu Ile Leu Cys Ser Val Asn Ile Leu Gln Phe	
138 143 148 153	
atc ttc atc gcc cta aag ctg gac agg att att cac tgg ccg tgg ctg	593
Ile Phe Ile Ala Leu Lys Leu Asp Arg Ile Ile His Trp Pro Trp Leu	
154 159 164 169	
gtg gtg ttt gtg ccc ctg tgg atc ctc atg tcg ttc ctt tgc ctg gtc	641
Val Val Phe Val Pro Leu Trp Ile Leu Met Ser Phe Leu Cys Leu Val	
170 175 180 185	
gtc ctc tat tac atc gtc tgg tcc ctc ctg ttc ctg cgg tcc ctg gat	689
Val Leu Tyr Tyr Ile Val Trp Ser Leu Leu Phe Leu Arg Ser Leu Asp	
186 191 196 201	
gtg gtt gcc gag cag cgg aga aca cac gtg acc atg gct atc agt tgg	737
Val Val Ala Glu Gln Arg Arg Thr His Val Thr Met Ala Ile Ser Trp	
202 207 212 217	
ata acg att gtc gtg cct ctg ctc act ttt gag gtc ctg ctg gtt cac	785
Ile Thr Ile Val Val Pro Leu Leu Thr Phe Glu Val Leu Leu Val His	

218	223	228	233	
aga ttg gat ggc cac	aat aca ttc tcc tac	gtc tcc ata ttt gtc ccc	833	
Arg Leu Asp Gly His	Asn Thr Phe Ser Tyr	Val Ser Ile Phe Val Pro		
234	239	244	249	
ctt tgg ctt tcc tta	cta act tta atg gcc	aca aca ttt agg cga aag	881	
Leu Trp Leu Ser Leu	Leu Thr Leu Met Ala	Thr Thr Phe Arg Arg Lys		
250	255	260	265	
ggg ggc aat cat tgg	tgg ttt ggc att cgc	aga gac ttc tgt cag ttt	929	
Gly Gly Asn His Trp	Trp Phe Gly Ile Arg	Arg Asp Phe Cys Gln Phe		
266	271	276	281	
ctg ctt gaa att ttc	cca ttt tta aga gaa	tat ggg aac att tca tat	977	
Leu Leu Glu Ile Phe	Pro Phe Leu Arg Glu	Tyr Gly Asn Ile Ser Tyr		
282	287	292	297	
gat ctg cat cac gaa	gat agt gaa gat gct	gaa gaa aca tca gtt cca	1025	
Asp Leu His His Glu	Asp Ser Glu Asp Ala	Glu Glu Thr Ser Val Pro		
298	303	308	313	
gaa gct ccg aaa att	gct cca ata ttt gga	aag aag gcc aga gta gtt	1073	
Glu Ala Pro Lys Ile	Ala Pro Ile Phe Gly	Lys Lys Ala Arg Val Val		
314	319	324	329	
ata acc cag agc cct	ggg aaa tac gtt ccc	ccc cct ccc aag tta aat	1121	
Ile Thr Gln Ser Pro	Gly Lys Tyr Val Pro	Pro Pro Pro Lys Leu Asn		
330	335	340	345	
att gat atg cca gat	tta actcct agagaggacc	caggcacaca cagactccac	1175	
Ile Asp Met Pro Asp	*			
346	351			
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tcgtctcacg ccgtgtttga	gatcaccgcc tcatcagtat	gcatcataga tggaggtggt	1295	
ttcagtatgt ggggtgtgtg	gggtgtgtacc tgggtaagag	acttgctttc cagggttcgca	1355	
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accacacagc tgtttggtta	aatgctactg tacctatcaa	aactattggt taaaaagtat	1475	
ttttatacac tgctaactta	aaattgtatt tcagattgtg	cctgtcataa caatagcaaa	1535	
tgtaaaaagt tctctttccc	accacttggt tataaacctc	atagttgata tttttagtg	1595	
tcctactggt aaaatactct	ctccttgggc ttgtctgata	ctggctctta atattctgat	1655	
aggtgaattt ttctaattga	atgaacccat gcatatatag	tatttatatg aatattttag	1715	
cagtgaata tgttgaattc	tagttctctg cattaccatt	attacgttaa agtatttttt	1775	
aaagcttagg tgtgaaaaaa	aaaaaaaa		1802	

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 <213> Homo sapiens

<220>
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 1 5

act gga ctt cag gga ata acc ttg tgt tat agt tgt ttt ccc tcc ttc 98
 Thr Gly Leu Gln Gly Ile Thr Leu Cys Tyr Ser Cys Phe Pro Ser Phe
 11 16 21 26

tgc aag atg aaa agc agg atg tgc atg gct atc agc att tgt cag acg 146
 Cys Lys Met Lys Ser Arg Met Cys Met Ala Ile Ser Ile Cys Gln Thr
 27 32 37 42

ctt tcc atg ttg agt ttt gtg gtc tgt gct ttc agg tac agg cat atg 194
 Leu Ser Met Leu Ser Phe Val Val Cys Ala Phe Arg Tyr Arg His Met
 43 48 53 58

ttc aaa agg ggt tgg cca atg ggt aca tgt tgt ttg ttt ctg ccc aca 242
 Phe Lys Arg Gly Trp Pro Met Gly Thr Cys Cys Leu Phe Leu Pro Thr
 59 64 69 74

gct gcc cca gtg ctc agc tgt gaa gct gca aca cag act gaa agg aga 290
 Ala Ala Pro Val Leu Ser Cys Glu Ala Ala Thr Gln Thr Glu Arg Arg
 75 80 85 90

ctg gat ctg gct gca gtg act ctg agg aga ggc ttg aga tct aga gct 338
 Leu Asp Leu Ala Ala Val Thr Leu Arg Arg Gly Leu Arg Ser Arg Ala
 91 96 101 106

tcg cga tgc aga ccg cgg tct ttg ata gat tac aaa tcc tac atg gac 386
 Ser Arg Cys Arg Pro Arg Ser Leu Ile Asp Tyr Lys Ser Tyr Met Asp
 107 112 117 122

acc aag ctg ctg gtg gcg agg ttc ctg gag cag tcc tct tgt acc atg 434
 Thr Lys Leu Leu Val Ala Arg Phe Leu Glu Gln Ser Ser Cys Thr Met
 123 128 133 138

acc cca gac atc cat gaa ctt gta gaa aac att aaa tct gtt ttg aaa 482
 Thr Pro Asp Ile His Glu Leu Val Glu Asn Ile Lys Ser Val Leu Lys
 139 144 149 154

tct gat gag gag cac atg gag gaa gcc atc aca agt gcc agt ttt cta 530
 Ser Asp Glu Glu His Met Glu Glu Ala Ile Thr Ser Ala Ser Phe Leu
 155 160 165 170

gaa cag ata atg gcc cca ttg cag ccc agc aca tcc agg gcc cac aag 578

Glu	Gln	Ile	Met	Ala	Pro	Leu	Gln	Pro	Ser	Thr	Ser	Arg	Ala	His	Lys	
171					176					181					186	
ctg	ccc	ttg	cgg	aga	cag	cct	ggc	ctg	ctg	cac	ctc	cag	agc	tgc	ggc	626
Leu	Pro	Leu	Arg	Arg	Gln	Pro	Gly	Leu	Leu	His	Leu	Gln	Ser	Cys	Gly	
187					192					197					202	
gac	ctt	cac	acc	atc	aca	cca	gcg	ggg	agg	ccc	cga	gcc	gag	agg	agg	674
Asp	Leu	His	Thr	Ile	Thr	Pro	Ala	Gly	Arg	Pro	Arg	Ala	Glu	Arg	Arg	
203					208					213					218	
ccc	cgg	cga	gtg	gag	gct	gag	cgg	tca	cac	agc	ctc	att	ggg	gtc	atc	722
Pro	Arg	Arg	Val	Glu	Ala	Glu	Arg	Ser	His	Ser	Leu	Ile	Gly	Val	Ile	
219					224					229					234	
cga	gag	act	gtc	ctg	tga	accctg	gaagacagaa	ggtcactcca	aggggaagga							776
Arg	Glu	Thr	Val	Leu	*											
235					240											
tccctctcct	ctctgtcatg	tcttgatgg	gagctgtggc	ccacctcaaa	aaaaaaggag											836
cactctggac	acgtgttccc	acctgttggg	tcccggtgtct	gctgactgag	ggcattcagg											896
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ccctggcatg	ggcagaaact	gggctaata	ttctttgccc	acttcacccc	tctgtgtctct											1076
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tgccctttggc	ctttcactgc	tctgcgattt	ggcaggaaat	aaggcgatta	accctatgtg											1196
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aggaaacttc	ttaagtga	aattttaatg	ccagacattt	aaggagagga	ttattgttga											1316
ttccatttac	tcatgcttgc	aaaactagag	accctaagg	cagaactgag	aataaacatg											1376
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gtcttgtctc tcttcagccc ctctctctct taattgacta ctccatcttc gctccttgga	180
acatcctttc attgggtcagc cacatttttc ctgcttggcc catccatccc catctatttg	240
tcatacccca tgaaacttaa cctcattatg gtttgcattc tggattctcc tctccaccat	300
ctggctttac cttgggggtg gtgtcgtaca tgacaca atg acg tgt ttc ggg cca	355
Met Thr Cys Phe Gly Pro	
1	
tat cct att gga act gga ctt cag gga ata acc ttg tgt tgt ttt ccc	403
Tyr Pro Ile Gly Thr Gly Leu Gln Gly Ile Thr Leu Cys Cys Phe Pro	
7 12 17 22	
tcc ttc tgc aag atg aaa agc agg atg tgc atg gct atc agc att tgt	451
Ser Phe Cys Lys Met Lys Ser Arg Met Cys Met Ala Ile Ser Ile Cys	
23 28 33 38	
cag atg ctt tcc atg ttg agt ttt gtg gtc tgt gct ttc agg tac agg	499
Gln Met Leu Ser Met Leu Ser Phe Val Val Cys Ala Phe Arg Tyr Arg	
39 44 49 54	
cat atg ttc aaa agg ggc tgg cca atg ggt aca tgt tgt ttg ttt ctg	547
His Met Phe Lys Arg Gly Trp Pro Met Gly Thr Cys Cys Leu Phe Leu	
55 60 65 70	
ccc aca gct gcc cca gtg ctc agc tgt gaa gct gca aca cag act gaa	595
Pro Thr Ala Ala Pro Val Leu Ser Cys Glu Ala Ala Thr Gln Thr Glu	
71 76 81 86	
agg aga ctg gat ctg gct gca gtg act ctg agg aga ggc ttg aga tct	643
Arg Arg Leu Asp Leu Ala Val Thr Leu Arg Arg Gly Leu Arg Ser	
87 92 97 102	
aga gct tcg cga tgc aga ccg cgg tct ttg ata gat tac aaa tcc tac	691
Arg Ala Ser Arg Cys Arg Pro Arg Ser Leu Ile Asp Tyr Lys Ser Tyr	
103 108 113 118	
atg gac acc aag ctg ctg gtg gcg agg ttc ctg gag cag tcc tct tgt	739
Met Asp Thr Lys Leu Leu Val Ala Arg Phe Leu Glu Gln Ser Ser Cys	
119 124 129 134	
acc atg acc cca gac atc cat gaa ctt gta gaa aac att aaa tct gtt	787
Thr Met Thr Pro Asp Ile His Glu Leu Val Glu Asn Ile Lys Ser Val	
135 140 145 150	
ttg aaa tct gat gag gag cac atg gag gaa gcc atc aca agt gcc agt	835
Leu Lys Ser Asp Glu Glu His Met Glu Glu Ala Ile Thr Ser Ala Ser	
151 156 161 166	
ttt cta gaa cag ata atg gcc cca ttg cag ccc agc aca tcc agg gcc	883
Phe Leu Glu Gln Ile Met Ala Pro Leu Gln Pro Ser Thr Ser Arg Ala	
167 172 177 182	
cac aag ctg ccc tcg cgg aga cag cct ggc ctg ctg cac ctc cag agc	931
His Lys Leu Pro Ser Arg Arg Gln Pro Gly Leu Leu His Leu Gln Ser	

183	188	193	198	
tgc ggc gac ctt cac acc ttc aca cca gcg ggg agg ccc cga gcc gag				979
Cys Gly Asp Leu His Thr Phe Thr Pro Ala Gly Arg Pro Arg Ala Glu				
199	204	209	214	
agg agg ccc cgg cga gtg gag gct gag cgg cca cac agc ctc att ggg				1027
Arg Arg Pro Arg Arg Val Glu Ala Glu Arg Pro His Ser Leu Ile Gly				
215	220	225	230	
gtc atc cga gag act gtc ctg tga accctggaag acagaaggcc actccaaggg				1081
Val Ile Arg Glu Thr Val Leu *				
231	236			
gaaggatccc tctcctctct gccatttctt ggctgggagc tgtggtccac ctcaaaaaa				1141
aggagcactc tggaggacac gttttccac ctgttggtc ccgtgtctgc tgactgaggg				1201
cattcaggag taaatgcaca ggtcggcca ggccgtctg ggtttgggat gcactgagtt				1261
ggaggttatg aaagctttga tctcttctt cctctgctgg gcctcgcagc attcccaagg				1321
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gtgtctctct ttgttgctaa gttctttccc tcttggaagg acagatctgc cgggctgcta				1441
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gcagtgtttt gccttcaccc caagtgacc atg aga ggt gcc acg cga gtc tca				113
	Met	Arg	Gly	Ala
	1		5	
atc atg ctc ctc cta gta act gtg tct gac tgt gct gtg atc aca ggg				161
Ile Met Leu Leu Leu Val Thr Val Ser Asp Cys Ala Val Ile Thr Gly				

9	14	19	24	
gcc tgt gag cgg gat gtc cag tgt ggg gca ggc acc tgc tgt gcc atc				209
Ala Cys Glu Arg Asp Val Gln Cys Gly Ala Gly Thr Cys Cys Ala Ile				
25	30	35	40	
agc ctg tgg ctt cga ggg ctg cgg atg tgc acc ccg ctg ggg cgg gaa				257
Ser Leu Trp Leu Arg Gly Leu Arg Met Cys Thr Pro Leu Gly Arg Glu				
41	46	51	56	
ggc gag gag tgc cac ccc ggc agc cac aag atc ccc ttc ttc agg aaa				305
Gly Glu Glu Cys His Pro Gly Ser His Lys Ile Pro Phe Phe Arg Lys				
57	62	67	72	
cgc aag cac cac acc tgt cct tgc ttg ccc aac ctg ctg tgc tcc agg				353
Arg Lys His His Thr Cys Pro Cys Leu Pro Asn Leu Leu Cys Ser Arg				
73	78	83	88	
ttc ccg gac ggc agg tac cgc tgc tcc atg gac ttg aag aac atc aat				401
Phe Pro Asp Gly Arg Tyr Arg Cys Ser Met Asp Leu Lys Asn Ile Asn				
89	94	99	104	
ttt tag gcgcttgct ggtctcagga taccacacat tcttttctg agcaca				453
Phe *				
105				

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 <220>
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ccccctcccc cctcgggcgc ggaccccgcg tgcgccttgc tcgcccgcag ccccgagacc	180
gcaggcgtea caatgtagca gggacccacag gcgtcgtgct cagaaaatgg aaaaagagcc	240
agggccggaa ggagggtgca gaagcgagtc cgcgtgcgga gccaggaggc agcgtcgcgt	300
gggagtgtctg gcctgaagcc tccatgcccc ggcagaggga cggacacgcg gacgtctagc	360
ggaggctccc gtgtcctcag tatgcatcag gtctcccgaa cctcacagcc ccgcaggggag	420
gaggagaagg ggaggatttg actttggaag tctctgtgac cagaagccaa ag atg	475
	Met
	1

ttg acc agg aag atc aag ctg tgg gac atc aac gcc cac atc acc tgc	523
Leu Thr Arg Lys Ile Lys Leu Trp Asp Ile Asn Ala His Ile Thr Cys	
2 7 12 17	
cgc ctg tgc agc ggg tac ctc atc gac gcc acc acg gtg acc gag tgt	571
Arg Leu Cys Ser Gly Tyr Leu Ile Asp Ala Thr Thr Val Thr Glu Cys	
18 23 28 33	
ctg cac acc ttc tgc agg agc tgc ctg gtg aag tac ctg gag gag aac	619
Leu His Thr Phe Cys Arg Ser Cys Leu Val Lys Tyr Leu Glu Glu Asn	
34 39 44 49	
atc acc tgc ccc acc tgc agg att gtg atc cac cag agc cac ccc ctg	667
Ile Thr Cys Pro Thr Cys Arg Ile Val Ile His Gln Ser His Pro Leu	
50 55 60 65	
cag tac atc ggt cat gac aga acc atg caa gat att gtt tac aaa ttg	715
Gln Tyr Ile Gly His Asp Arg Thr Met Gln Asp Ile Val Tyr Lys Leu	
66 71 76 81	
gta cca ggc ctc caa gaa gcg gaa atg aga aag cag agg gag ttc tat	763
Val Pro Gly Leu Gln Glu Ala Glu Met Arg Lys Gln Arg Glu Phe Tyr	
82 87 92 97	
cac aaa ttg ggc atg gag gtg ccg gga gac atc aag ggg gag acc tgc	811
His Lys Leu Gly Met Glu Val Pro Gly Asp Ile Lys Gly Glu Thr Cys	
98 103 108 113	
tct gca aaa cag cac tta gat tcc cat cgg aat ggt gaa acc aaa gca	859
Ser Ala Lys Gln His Leu Asp Ser His Arg Asn Gly Glu Thr Lys Ala	
114 119 124 129	
gac gac agt tca aac aaa gag gcc gcg gag gag aag ccg gag gag gac	907
Asp Asp Ser Ser Asn Lys Glu Ala Ala Glu Glu Lys Pro Glu Glu Asp	
130 135 140 145	
aac gac tac cac cgc agc gac gag cag gtg agc atc tgc ctg gag tgt	955
Asn Asp Tyr His Arg Ser Asp Glu Gln Val Ser Ile Cys Leu Glu Cys	
146 151 156 161	
aac agc agc aaa ctg cgc ggg ctg aag cgg aag tgg atc cgc tgc tca	1003
Asn Ser Ser Lys Leu Arg Gly Leu Lys Arg Lys Trp Ile Arg Cys Ser	
162 167 172 177	
gcc cag gcg acc gtc ttg cat ctg aag aag ttc atc gcc aaa aaa ctc	1051
Ala Gln Ala Thr Val Leu His Leu Lys Lys Phe Ile Ala Lys Lys Leu	
178 183 188 193	
aac ctt tca tcc ttt aac gag ctg gac att tta tgc aac gag gag atc	1099
Asn Leu Ser Ser Phe Asn Glu Leu Asp Ile Leu Cys Asn Glu Glu Ile	
194 199 204 209	
ctg ggc aag gac cac aca ctc aag ttc gtg gtt gtc act agg tgg aga	1147
Leu Gly Lys Asp His Thr Leu Lys Phe Val Val Val Thr Arg Trp Arg	
210 215 220 225	

ttc aag aag gcg ccg ctc ctg ctg cac tac aga ccc aag atg gac ttg 1195
 Phe Lys Lys Ala Pro Leu Leu Leu His Tyr Arg Pro Lys Met Asp Leu
 226 231 236 241
 ctg tga atggtgccac acagcgccca cagactgggc cctcgacccc ttgggtgctc 1251
 Leu *
 242
 ccggccgccc cgcttaagaa cattgcctct ggggtgtcatg tggaccagac ttctgaatag 1311
 agaatattta taacttttgt atgagagaga attcacactc aacaagacac taccagcacc 1371
 acgtttacag aggatgaaaa cacttcacag tctcccagag ccgatcgtcc tctccccgcg 1431
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 aatccttcct aagttattga aaaaatgtct tttcatgggtg aatgacaata tttatgttgc 1671
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 aaaa 1735

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 <213> Homo sapiens

<220>
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 gcc gag gtc tcc cgg ctg ctc ctc gcc acc ggc cac tgg aag agg ctg 95
 Ala Glu Val Ser Arg Leu Leu Leu Ala Thr Gly His Trp Lys Arg Leu
 15 20 25 30
 cgg cga gac aac ccc aga ttc aac ctg atg ctg gga gag agg aat cgg 143
 Arg Arg Asp Asn Pro Arg Phe Asn Leu Met Leu Gly Glu Arg Asn Arg
 31 36 41 46
 ctg ccc ttc ggg aga ctg ggt cac gag ccc ggg ctg gta cag ttg gtg 191
 Leu Pro Phe Gly Arg Leu Gly His Glu Pro Gly Leu Val Gln Leu Val
 47 52 57 62
 aat tac tac agg ggt gct gac aaa ctg tgt cgc aaa gct tct tta gtg 239
 Asn Tyr Tyr Arg Gly Ala Asp Lys Leu Cys Arg Lys Ala Ser Leu Val

63	68	73	78	
aag cta atc aag aca agc cct gaa ctg gct gag tcc tgc aca tgg ttc				287
Lys Leu Ile Lys Thr Ser Pro Glu Leu Ala Glu Ser Cys Thr Trp Phe				
79	84	89	94	
cct gaa tct tat gtg att tat cca acc aat ctc aag act cca gtt gct				335
Pro Glu Ser Tyr Val Ile Tyr Pro Thr Asn Leu Lys Thr Pro Val Ala				
95	100	105	110	
cca gca cag aat gga att cag cca cca atc agt aac tca agg aca gat				383
Pro Ala Gln Asn Gly Ile Gln Pro Pro Ile Ser Asn Ser Arg Thr Asp				
111	116	121	126	
gaa aga gaa ttc ttt ctc gcc tct tat aac aga aag aaa gag gat gga				431
Glu Arg Glu Phe Phe Leu Ala Ser Tyr Asn Arg Lys Lys Glu Asp Gly				
127	132	137	142	
gag ggc aac gtt tgg att gca aag tca tca gcc ggt gcc aaa ggt gaa				479
Glu Gly Asn Val Trp Ile Ala Lys Ser Ser Ala Gly Ala Lys Gly Glu				
143	148	153	158	
ggc att ctc atc tcc tca gag gct tca gag ctt ctc gat ttc ata gac				527
Gly Ile Leu Ile Ser Ser Glu Ala Ser Glu Leu Leu Asp Phe Ile Asp				
159	164	169	174	
aac cag ggc caa gtg cac gtg atc cag aaa tat ctt gag cac cct ctg				575
Asn Gln Gly Gln Val His Val Ile Gln Lys Tyr Leu Glu His Pro Leu				
175	180	185	190	
ctg ctt gag cca ggt cat cgc aag ttt gac atc cga agc tgg gtc ttg				623
Leu Leu Glu Pro Gly His Arg Lys Phe Asp Ile Arg Ser Trp Val Leu				
191	196	201	206	
gtg gat cat cag tat aat atc tac ctc tat aga gag ggt gtg ctt cgg				671
Val Asp His Gln Tyr Asn Ile Tyr Leu Tyr Arg Glu Gly Val Leu Arg				
207	212	217	222	
act gct tca gaa cca tat cat gtt gat aat ttc caa gac aaa acc tgc				719
Thr Ala Ser Glu Pro Tyr His Val Asp Asn Phe Gln Asp Lys Thr Cys				
223	228	233	238	
cat ttg acc aat cac tgc att caa aaa gag tat tca aag aac tac ggg				767
His Leu Thr Asn His Cys Ile Gln Lys Glu Tyr Ser Lys Asn Tyr Gly				
239	244	249	254	
aag tat gaa gaa gga aat gaa atg ttc ttc aag gag ttc aat cag tac				815
Lys Tyr Glu Glu Gly Asn Glu Met Phe Phe Lys Glu Phe Asn Gln Tyr				
255	260	265	270	
cta aca agt gct ttg aac att acc cta gaa agt agt atc tta cta caa				863
Leu Thr Ser Ala Leu Asn Ile Thr Leu Glu Ser Ser Ile Leu Leu Gln				
271	276	281	286	
atc aaa cat ata ata agg aac tgc ctc ctg agc gtg gag cct gcc att				911
Ile Lys His Ile Ile Arg Asn Cys Leu Leu Ser Val Glu Pro Ala Ile				
287	292	297	302	

agc acc aag cac ctc cct tac cag agc ttc cag ctc ttc ggc ttt gac 959
 Ser Thr Lys His Leu Pro Tyr Gln Ser Phe Gln Leu Phe Gly Phe Asp
 303 308 313 318
 ttc atg gtc gac gag gag ctg aag gtg tgg ctc att gag gtc aac ggt 1007
 Phe Met Val Asp Glu Glu Leu Lys Val Trp Leu Ile Glu Val Asn Gly
 319 324 329 334
 gcc cct gca tgt gct cag aag ctc tat gca gaa ctg tgc caa ggc atc 1055
 Ala Pro Ala Cys Ala Gln Lys Leu Tyr Ala Glu Leu Cys Gln Gly Ile
 335 340 345 350
 gtg gac ata gcc att tcc agt gtc ttc cca ccc cca gat gtg gag caa 1103
 Val Asp Ile Ala Ile Ser Ser Val Phe Pro Pro Pro Asp Val Glu Gln
 351 356 361 366
 cct cag acc cag cca gct gcc ttc atc aag ctg tga caga gggcactccc 1153
 Pro Gln Thr Gln Pro Ala Ala Phe Ile Lys Leu *
 367 372 377
 tgctgccttg gaaaaagcac ggtgtactgc tc 1185

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 gagcggcggc ggccatcgag acccacccaa ggcgcgctcc cctcggcctc ccagcgctcc 180
 caagccgtag cggccgcgcc cttcagcta gctcgcctgc tcgctctgct tcctgtctgc 240
 cggctgcgcc atg gcg ttg gcg ttg gcg gcg ctg gcg gcg gtc gag ccg 289
 Met Ala Leu Ala Leu Ala Ala Leu Ala Ala Val Glu Pro
 1 5 10
 gcc tgc ggc agc cgg tac cag cag ttg cag aat gaa gaa gag tct gga 337
 Ala Cys Gly Ser Arg Tyr Gln Gln Leu Gln Asn Glu Glu Glu Ser Gly
 14 19 24 29
 gaa cct gaa cag gct gca ggt gat gct cct cca cct tac agc agc att 385
 Glu Pro Glu Gln Ala Ala Gly Asp Ala Pro Pro Pro Tyr Ser Ser Ile
 30 35 40 45
 tct gca gag agc gca gca tat ttt gac tac aag gat gag tct ggg ttt 433

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 gctgttcaag ttaatctaga aatttattca attctgtatg aacacctgga agcaaaatca 1450
 tagtgcaaaa atacatttaa ggtgtgggtca aaaataagtc tttaattggg aaataataag 1510
 cattaatttt ttatagcctg tattcacaat tctgcggtac cttattgtac ctaagggtt 1570
 ctaaagggtg tgctactgta taaaacagaa agcactagga tacaatgaa gcttaattac 1630
 taaaatgtaa ttcttgacac tctttctata attagcgttc ttcaccccca ccccccaccc 1690
 cccccccctt attttccttt tgtctcctgg tgattaggcc aaagtctggg agtaaggaga 1750
 ggattaggta cttaggagca aagaaagaag tagcttgga cttttgagat gatccctaac 1810
 atactgtact acttgctttt acaatgtgtt agcagaaacc agtgggttat aatgtagaat 1870
 gatgtgcttt ctgccaagt ggtaattcat cttgggttgc tatgttaaaa ctgtaaatat 1930
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 <213> Homo sapiens

<220>
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 <222> (103)..(1374)

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 Met Ala Leu Ala
 1
 tcc ggg ccc gca agg cgg gcg cta gct ggc tcc ggg cag ctc ggc ctt 162
 Ser Gly Pro Ala Arg Arg Ala Leu Ala Gly Ser Gly Gln Leu Gly Leu
 5 10 15 20
 ggg ggc ttc ggg gcc ccg aga cgc ggg gcg tat gag tgg ggc gtg cgc 210
 Gly Gly Phe Gly Ala Pro Arg Arg Gly Ala Tyr Glu Trp Gly Val Arg
 21 26 31 36
 tcc acg cgg aag tcg gag cct cct ccc ctg gat agg gtg tac gag atc 258
 Ser Thr Arg Lys Ser Glu Pro Pro Pro Leu Asp Arg Val Tyr Glu Ile
 37 42 47 52
 cct gga ctg gag ccc atc acc ttt gcg ggg aag atg cac ttc gtg ccc 306
 Pro Gly Leu Glu Pro Ile Thr Phe Ala Gly Lys Met His Phe Val Pro

53

58

63

68

tgg ctg gcg cgg ccg atc ttt ccg ccc tgg gac cgc ggc tac aag gac 354
 Trp Leu Ala Arg Pro Ile Phe Pro Pro Trp Asp Arg Gly Tyr Lys Asp
 69 74 79 84

cca agg ttc tac cgc tgc ccc cct ctt cac gag cat ccg ctg tac aaa 402
 Pro Arg Phe Tyr Arg Ser Pro Pro Leu His Glu His Pro Leu Tyr Lys
 85 90 95 100

gac cag gcc tgc tat atc ttt cac cac cgt tgc cgc ctt ctc gag ggt 450
 Asp Gln Ala Cys Tyr Ile Phe His His Arg Cys Arg Leu Leu Glu Gly
 101 106 111 116

gta aag cag gcc ctc tgg ctc acc aag acc aag tta ata gaa ggc ctt 498
 Val Lys Gln Ala Leu Trp Leu Thr Lys Thr Lys Leu Ile Glu Gly Leu
 117 122 127 132

ccc gag aaa gtg ctt agc ctt gtt gat gat cca agg aac cac ata gag 546
 Pro Glu Lys Val Leu Ser Leu Val Asp Asp Pro Arg Asn His Ile Glu
 133 138 143 148

aac caa gac gag tgc gtt ctg aat gtg atc tct cac gcc cgt ctc tgg 594
 Asn Gln Asp Glu Cys Val Leu Asn Val Ile Ser His Ala Arg Leu Trp
 149 154 159 164

cag acc act gag gaa atc ccc aag aga gag acc tac tgc ccg gtc atc 642
 Gln Thr Thr Glu Glu Ile Pro Lys Arg Glu Thr Tyr Cys Pro Val Ile
 165 170 175 180

gtg gac aac cta ata cag ctg tgt aaa tct cag att ctc aag cat cct 690
 Val Asp Asn Leu Ile Gln Leu Cys Lys Ser Gln Ile Leu Lys His Pro
 181 186 191 196

tct ctg gcc agg agg atc tgt gtc caa aac tcc acg ttt tct gct acc 738
 Ser Leu Ala Arg Arg Ile Cys Val Gln Asn Ser Thr Phe Ser Ala Thr
 197 202 207 212

tgg aac cga gag tct ctt ctc ctt caa gtc cgt ggt tct ggt gga gcc 786
 Trp Asn Arg Glu Ser Leu Leu Leu Gln Val Arg Gly Ser Gly Gly Ala
 213 218 223 228

cga ctg agc act aag gat cct ctg ccc acc atc gcc tcc aga gag gag 834
 Arg Leu Ser Thr Lys Asp Pro Leu Pro Thr Ile Ala Ser Arg Glu Glu
 229 234 239 244

att gaa gct act aag aat cat gtt cta gag acc ttc tac ccc ata tca 882
 Ile Glu Ala Thr Lys Asn His Val Leu Glu Thr Phe Tyr Pro Ile Ser
 245 250 255 260

ccc atc atc gat ctt cat gaa tgc aat att tat gat gtg aaa aat gac 930
 Pro Ile Ile Asp Leu His Glu Cys Asn Ile Tyr Asp Val Lys Asn Asp
 261 266 271 276

aca gga ttc cag gaa ggc tat cct tac ccc tat ccc cat acc ctg tac 978
 Thr Gly Phe Gln Glu Gly Tyr Pro Tyr Pro Tyr Pro His Thr Leu Tyr
 277 282 287 292

tta ctg gac aaa gcc aat tta cga cca cac cgc ctt caa cca gat cag	1026
Leu Leu Asp Lys Ala Asn Leu Arg Pro His Arg Leu Gln Pro Asp Gln	
293 298 303 308	
ctg cgg gcc aag atg atc ctg ttt gct ttt ggc agt gcc ctg gct cag	1074
Leu Arg Ala Lys Met Ile Leu Phe Ala Phe Gly Ser Ala Leu Ala Gln	
309 314 319 324	
gcc cgg ctc ctc tat ggg aat gat gcc aag gtc ttg gag cag ccc gtg	1122
Ala Arg Leu Leu Tyr Gly Asn Asp Ala Lys Val Leu Glu Gln Pro Val	
325 330 335 340	
gtg gtg cag agc gtg ggc acg gat gga cgt gtc ttc cat ttc cta gtg	1170
Val Val Gln Ser Val Gly Thr Asp Gly Arg Val Phe His Phe Leu Val	
341 346 351 356	
ttt caa ctg aat acc aca gac ctg gac tgt aac gag ggt gtc aag aat	1218
Phe Gln Leu Asn Thr Thr Asp Leu Asp Cys Asn Glu Gly Val Lys Asn	
357 362 367 372	
ttg gcc tgg gtg gac tca gac cag ctc ctc tat cag cat ttt tgg tgt	1266
Leu Ala Trp Val Asp Ser Asp Gln Leu Leu Tyr Gln His Phe Trp Cys	
373 378 383 388	
ctc cca gtg atc aaa aag aga gtg gtt gtg gaa cct gtt ggg cca gtt	1314
Leu Pro Val Ile Lys Lys Arg Val Val Val Glu Pro Val Gly Pro Val	
389 394 399 404	
ggt ttc aag cca gag aca ttc aga aag ttt tta gct cta tat ttg cat	1362
Gly Phe Lys Pro Glu Thr Phe Arg Lys Phe Leu Ala Leu Tyr Leu His	
405 410 415 420	
ggt gct gcg tga gca gaggaccct ctgaatcctg aaaccctct tgcctctctt	1417
Gly Ala Ala *	
421	
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tgacaataaa gagcccttgc gttgcaaaaa aaaaaaa	1514

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<220>
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ggacattgtg tgggccagag gcaggg	atg gtt ggc tat gac ccc aaa cca gat	173
	Met Val Gly Tyr Asp Pro Lys Pro Asp	
	1 5	
ggc agg aat aac acc aag ttc cag gtg gca gtg gct ggg tct gtg tct		221
Gly Arg Asn Asn Thr Lys Phe Gln Val Ala Val Ala Gly Ser Val Ser		
10 15 20 25		
gga ctt gtt act cgg gcg ctg atc agt ccc ttc gac gtc atc aag atc		269
Gly Leu Val Thr Arg Ala Leu Ile Ser Pro Phe Asp Val Ile Lys Ile		
26 31 36 41		
cgt ttc cag ctt cag cat gag cgc ctg tct cgc agt gac ccc agc gca		317
Arg Phe Gln Leu Gln His Glu Arg Leu Ser Arg Ser Asp Pro Ser Ala		
42 47 52 57		
aag tac cat ggc atc ctc cag gcc tct agg cag att ctg cag gag gag		365
Lys Tyr His Gly Ile Leu Gln Ala Ser Arg Gln Ile Leu Gln Glu Glu		
58 63 68 73		
ggg ccg aca gct ttc tgg aaa gga cac gtc cca gct cag att ctc tcc		413
Gly Pro Thr Ala Phe Trp Lys Gly His Val Pro Ala Gln Ile Leu Ser		
74 79 84 89		
ata ggc tat gga gct gtc caa ttc ttg tca ttt gaa atg ctg acg gag		461
Ile Gly Tyr Gly Ala Val Gln Phe Leu Ser Phe Glu Met Leu Thr Glu		
90 95 100 105		
ctg gtc cac aga ggc agc gtg tac gac gcc cgg gaa ttc tca gtg cac		509
Leu Val His Arg Gly Ser Val Tyr Asp Ala Arg Glu Phe Ser Val His		
106 111 116 121		
ttt gta tgt ggt ggc ctg gct gcc tgt atg gcc acc ctc act gtg cac		557
Phe Val Cys Gly Gly Leu Ala Ala Cys Met Ala Thr Leu Thr Val His		
122 127 132 137		
ccc gtg gat gtt ctg cgc acc cgc ttt gca gct cag ggt gag ccc aag		605
Pro Val Asp Val Leu Arg Thr Arg Phe Ala Ala Gln Gly Glu Pro Lys		
138 143 148 153		
gtc tat aat acg ctg cgc cac gcc gtg ggg acc atg tat agg agc gaa		653
Val Tyr Asn Thr Leu Arg His Ala Val Gly Thr Met Tyr Arg Ser Glu		
154 159 164 169		
ggc ccc cag gtt ttc tac aaa ggc ttg gct ccc acc ttg atc gcc atc		701
Gly Pro Gln Val Phe Tyr Lys Gly Leu Ala Pro Thr Leu Ile Ala Ile		
170 175 180 185		
ttc ccc tac gcc ggg ctg cag ttc tct tgc tac agc tcc ttg aag cac		749
Phe Pro Tyr Ala Gly Leu Gln Phe Ser Cys Tyr Ser Ser Leu Lys His		
186 191 196 201		
ctg tac aag tgg gcc ata cca gcc gaa gga aag aaa aat gag aac ctc		797
Leu Tyr Lys Trp Ala Ile Pro Ala Glu Gly Lys Lys Asn Glu Asn Leu		
202 207 212 217		

caa aac ctg ctt tgt ggc agt gga gct ggt gtc atc agc aag acc ctg	845
Gln Asn Leu Leu Cys Gly Ser Gly Ala Gly Val Ile Ser Lys Thr Leu	
218 223 228 233	
aca tat ccg ctg gac ctc ttc aag aag cgg cta cag gtt gga ggg ttt	893
Thr Tyr Pro Leu Asp Leu Phe Lys Lys Arg Leu Gln Val Gly Gly Phe	
234 239 244 249	
gag cat gcc aga gct gcc ttt ggc cag gta cgg aga tac aag ggc ctc	941
Glu His Ala Arg Ala Ala Phe Gly Gln Val Arg Arg Tyr Lys Gly Leu	
250 255 260 265	
atg gac tgt gcc aag cag gtg cta caa aag gaa ggc gcc ctg ggc ttc	989
Met Asp Cys Ala Lys Gln Val Leu Gln Lys Glu Gly Ala Leu Gly Phe	
266 271 276 281	
ttc aag ggc ctg tcc ccc agc ttg ctg aag gct gcc ctc tcc aca ggc	1037
Phe Lys Gly Leu Ser Pro Ser Leu Leu Lys Ala Ala Leu Ser Thr Gly	
282 287 292 297	
ttc atg ttc ttc tgc tat gaa ttc ttc tgt aat gtc ttc cac tgc atg	1085
Phe Met Phe Phe Ser Tyr Glu Phe Phe Cys Asn Val Phe His Cys Met	
298 303 308 313	
aac agg aca gcc agc cag cgc tga ggcaggaag gacccaggt cttccctgga	1139
Asn Arg Thr Ala Ser Gln Arg *	
314 319	
ggcagcctcc tgaaggaagg aagattcagt ctccactgag aggtgccgtc tggcccttcc	1199
ctgcaggcca gctgccccaa ggggggtagc agccttgaac ccacccagct gggacaccac	1259
cagaaggtcc agggctctcc ccatgagaga atcagaggga atgcaggacg tggctctatgg	1319
tgagccaacg acacagtgag aaggagcagg aagttgctgt ttctcctctg accagcccac	1379
actgcaaagg aaacagacgc catcctacac ctatcagccc tgccctgccag gagaacagaa	1439
cacactcctg gtctggatgg ggctgctgct tgagtgcaga gggctgcggt aggccctttg	1499
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aaacacacat tccttatctt aaaaaaaaaa aaaaa	1594

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 <212> DNA
 <213> Homo sapiens

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 <222> (266)..(1759)

<400> 403

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cggagatgtc gtcgggccgc cttctaccag gagcctgac cgtgccgccc gccgcccga	180
tgggaccacc agagtgtctt aaagtctcca gtgaatattg aattgctgag gattttggga	240
aaagacaaat caaagttccc attcc atg gat ccc tta ggt gca cct tcc cag	292
Met Asp Pro Leu Gly Ala Pro Ser Gln	
1 5	
ttt gtg gat gtg gat aca cta cca agc tgg ggt gac tca tgc caa gat	340
Phe Val Asp Val Asp Thr Leu Pro Ser Trp Gly Asp Ser Cys Gln Asp	
10 15 20 25	
gaa tta aat tcc tct gat act aca gct gaa ata ttt cag gaa gac act	388
Glu Leu Asn Ser Ser Asp Thr Thr Ala Glu Ile Phe Gln Glu Asp Thr	
26 31 36 41	
gtt cga tca cct ttt ctt tat aat aag gac gtc aat gga aaa gtg gtt	436
Val Arg Ser Pro Phe Leu Tyr Asn Lys Asp Val Asn Gly Lys Val Val	
42 47 52 57	
ctt tgg aaa gga gat gtg gca tta ctg aac tgt aca gcc att gtg aat	484
Leu Trp Lys Gly Asp Val Ala Leu Leu Asn Cys Thr Ala Ile Val Asn	
58 63 68 73	
acc agc aat gaa agt ctc aca gat aag aat cct gtg tca gaa agt atc	532
Thr Ser Asn Glu Ser Leu Thr Asp Lys Asn Pro Val Ser Glu Ser Ile	
74 79 84 89	
ttc atg ctt gca ggg cct gat ttg aag gaa gat ctc cag aaa ctt aaa	580
Phe Met Leu Ala Gly Pro Asp Leu Lys Glu Asp Leu Gln Lys Leu Lys	
90 95 100 105	
ggg tgc cga aca ggt gaa gca aaa ttg aca aaa gga ttc aat cta gct	628
Gly Cys Arg Thr Gly Glu Ala Lys Leu Thr Lys Gly Phe Asn Leu Ala	
106 111 116 121	
gcc cgg ttc atc att cac aca gtg gga cct aaa tat aaa agc cgc tat	676
Ala Arg Phe Ile Ile His Thr Val Gly Pro Lys Tyr Lys Ser Arg Tyr	
122 127 132 137	
cgc aca gca gct gag agt tcc ctt tat agc tgc tac aga aac gta ctt	724
Arg Thr Ala Ala Glu Ser Ser Leu Tyr Ser Cys Tyr Arg Asn Val Leu	
138 143 148 153	
caa cta gca aaa gag cag tca atg tct tct gtt ggc ttc tgt gtc atc	772
Gln Leu Ala Lys Glu Gln Ser Met Ser Ser Val Gly Phe Cys Val Ile	
154 159 164 169	
aat tct gca aaa cgt ggt tat cct tta gag gat gca aca cac ata gca	820
Asn Ser Ala Lys Arg Gly Tyr Pro Leu Glu Asp Ala Thr His Ile Ala	
170 175 180 185	
ctt cgc act gta aga aga ttc cta gag att cat ggg gaa acc att gaa	868

410	415	420	425	
ttt gta cat ccc aca	ttt cgt tca aag gtg	tca aca tgg ttt ttt	acc	1588
Phe Val His Pro Thr	Phe Arg Ser Lys Val	Ser Thr Trp Phe Phe	Thr	
426	431	436	441	
acc ttt tct gtc tca	gga ctg aag gac aaa	atc cac cat gtg gac	agc	1636
Thr Phe Ser Val Ser	Gly Leu Lys Asp Lys	Ile His His Val Asp	Ser	
442	447	452	457	
ctc cac cag ctg ttt	tct gcc ata tca cca	gaa cag att gac ttt	cct	1684
Leu His Gln Leu Phe	Ser Ala Ile Ser Pro	Glu Gln Ile Asp Phe	Pro	
458	463	468	473	
cct ttt gtc ctt gaa	tat gat gcc agg gaa	aac ggg cct tac tat	aca	1732
Pro Phe Val Leu Glu	Tyr Asp Ala Arg Glu	Asn Gly Pro Tyr Tyr	Thr	
474	479	484	489	
tca tat ccc cca tca	cca gat ttg tga cctgc	catctttcag tgcttcttgg		1784
Ser Tyr Pro Pro Ser	Pro Asp Leu *			
490	495			
ttcccaggat gccacttcct	ccacgaatag ctacctgttg	aagtgatatt cattgttgct		1844
gtacagatcc agagagcctt	ttgtcccccac ctctctggta	tttttttatt gactgtatat		1904
tttctggcac ataagcaatc	taaaaatggt aggcattct	gaactgcaca cattttaaat		1964
ttgtatatatt atatgaaatg	gaaatgttca ttttttagatt	gttaatagaa attggggagc		2024
aacttttgag tatcttttagt	ttcctgaagg acaccgaatt	ctccattaga taaaccacca		2084
agactgttca catcatctct	ctaacattgc acgcttcctt	tgtgtactta agtgattctc		2144
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 <213> Homo sapiens

<220>
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 <222> (238) .. (1512)

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ggctgggtctg gggccgggta	
120	
ccttcaggcc tcaggcagag	tcacgggtggc agcattgaga
gttggacacc cgggtccttg	
180	
aagtgatctc taggccccag	ccccaaatcc gccaccatc
cgtgctgcgg ggacacc	
237	
atg gct cca gaa gag	gac gct gga ggg gag
gcc tta ggg ggc agt	ttc
285	

Met Ala Pro Glu Glu Asp Ala Gly Gly Glu Ala Leu Gly Gly Ser Phe
 1 5 10 15

tgg gag gct ggc aac tac agg cgc acg gta cag cgg gtg gag gac ggg	333
Trp Glu Ala Gly Asn Tyr Arg Arg Thr Val Gln Arg Val Glu Asp Gly	
17 22 27 32	
cac cgg ctg tgc ggg gac ctg gtc agc tgc ttc cag gag cgc gcc cgc	381
His Arg Leu Cys Gly Asp Leu Val Ser Cys Phe Gln Glu Arg Ala Arg	
33 38 43 48	
atc gag aag gct tat gcc cag cag ttg gct gac tgg gcc cga aag tgg	429
Ile Glu Lys Ala Tyr Ala Gln Gln Leu Ala Asp Trp Ala Arg Lys Trp	
49 54 59 64	
agg ggg acc gtg gag aag ggc ccc cag tat ggc aca ctg gag aag gcc	477
Arg Gly Thr Val Glu Lys Gly Pro Gln Tyr Gly Thr Leu Glu Lys Ala	
65 70 75 80	
tgg cat gcc ttt ttc acg gcg gct gag cgg ctg agc gcg ctg cac ctg	525
Trp His Ala Phe Phe Thr Ala Ala Glu Arg Leu Ser Ala Leu His Leu	
81 86 91 96	
gag gtg cgg gag aag ctg caa ggg cag gac agt gag cgg gtg cgc gcc	573
Glu Val Arg Glu Lys Leu Gln Gly Gln Asp Ser Glu Arg Val Arg Ala	
97 102 107 112	
tgg cag cgg ggg gct ttc cac cgg cct gtg ctg ggc ggc ttc cgc gag	621
Trp Gln Arg Gly Ala Phe His Arg Pro Val Leu Gly Gly Phe Arg Glu	
113 118 123 128	
agc cgg gcg gcc gag gac ggc ttc cgc aag gcc cag aag ccc tgg ctg	669
Ser Arg Ala Ala Glu Asp Gly Phe Arg Lys Ala Gln Lys Pro Trp Leu	
129 134 139 144	
aag agg ctg aag gag gtt gag gct tcc aag aaa agc tac cac gca gcc	717
Lys Arg Leu Lys Glu Val Glu Ala Ser Lys Lys Ser Tyr His Ala Ala	
145 150 155 160	
cgg aag gat gag aag acc gcc cag acg agg gag agc cac gca aag gca	765
Arg Lys Asp Glu Lys Thr Ala Gln Thr Arg Glu Ser His Ala Lys Ala	
161 166 171 176	
gac agc gcc gtc tcc cag gag cag ctg cgc aaa ctg cag gaa cgg gtg	813
Asp Ser Ala Val Ser Gln Glu Gln Leu Arg Lys Leu Gln Glu Arg Val	
177 182 187 192	
gaa cgc tgt gcc aag gag gcc gag aag aca aaa gct cag tat gag cag	861
Glu Arg Cys Ala Lys Glu Ala Glu Lys Thr Lys Ala Gln Tyr Glu Gln	
193 198 203 208	
acg ctg gca gag ctg cat cgc tac act cca cgc tac atg gag gac atg	909
Thr Leu Ala Glu Leu His Arg Tyr Thr Pro Arg Tyr Met Glu Asp Met	
209 214 219 224	
gaa cag gcc ttt gag acc tgc cag gcc gcc gag cgc cag cgg ctt ctt	957
Glu Gln Ala Phe Glu Thr Cys Gln Ala Ala Glu Arg Gln Arg Leu Leu	

225	230	235	240	
ttc ttc aag gat atg	ctg ctc acc tta cac	cag cac ctg gac ctt tcc		1005
Phe Phe Lys Asp Met	Leu Leu Thr Leu His	Gln His Leu Asp Leu Ser		
241	246	251	256	
agc agt gag aag ttc	cat gaa ctc cac cgt	gac ttg cac cag ggc att		1053
Ser Ser Glu Lys Phe	His Glu Leu His Arg	Asp Leu His Gln Gly Ile		
257	262	267	272	
gag gca gcc agt gac	gaa gag gat ctg cgc	tgg tgg cgc agc acc cac		1101
Glu Ala Ala Ser Asp	Glu Glu Asp Leu Arg	Trp Trp Arg Ser Thr His		
273	278	283	288	
ggg cca ggc atg gcc	atg aac tgg cca cag	ttc gag gag tgg tcc ttg		1149
Gly Pro Gly Met Ala	Met Asn Trp Pro Gln	Phe Glu Glu Trp Ser Leu		
289	294	299	304	
gac aca cag agg aca	atc agc cgg aaa gag	aag ggt ggc cgg agc cct		1197
Asp Thr Gln Arg Thr	Ile Ser Arg Lys Glu	Lys Gly Gly Arg Ser Pro		
305	310	315	320	
gat gag gtt acc ctg	acc agc att gtg cct	aca aga gat ggc acc gca		1245
Asp Glu Val Thr Leu	Thr Ser Ile Val Pro	Thr Arg Asp Gly Thr Ala		
321	326	331	336	
ccc cca ccc cag tcc	ccg ggg tcc cca ggc	acg ggg cag gat gag gag		1293
Pro Pro Pro Gln Ser	Pro Gly Ser Pro Gly	Thr Gly Gln Asp Glu Glu		
337	342	347	352	
tgg tca gat gaa gag	agt ccc cgg aag gct	gcc acc ggg gtt cgg gtg		1341
Trp Ser Asp Glu Glu	Ser Pro Arg Lys Ala	Ala Thr Gly Val Arg Val		
353	358	363	368	
agg gca ctc tat gac	tac gct ggc cag gaa	gct gat gag ctg agc ttc		1389
Arg Ala Leu Tyr Asp	Tyr Ala Gly Gln Glu	Ala Asp Glu Leu Ser Phe		
369	374	379	384	
cga gca ggg gag gag	ctg ctg aag atg agt	gag gag gac gag cag ggc		1437
Arg Ala Gly Glu Glu	Leu Leu Lys Met Ser	Glu Glu Asp Glu Gln Gly		
385	390	395	400	
tgg tgc caa ggc cag	ttg cag agt ggc cgc	att ggc ctg tac cct gcc		1485
Trp Cys Gln Gly Gln	Leu Gln Ser Gly Arg	Ile Gly Leu Tyr Pro Ala		
401	406	411	416	
aac tac gtg gag tgt	gtg ggc gcc tga gtgtc	ctgacagccc ttctgcaacg		1537
Asn Tyr Val Glu Cys	Val Gly Ala *			
417	422			
tttaccacc ctggttcaga	gcccagcttc tcttgagag	ccggaccctc agggccctga		1597
accgtcgctc tctggctgct	cctctgtccc ttgagggagg	aagtcctggg acccagggag		1657
gggagggggcc tttgtctagg	gaagggactg gtagggaagg	gacgagtcta ggctgagggc		1717
aagatgggag gtcagaggtg	acagaagcgt tcaggggtgc	ctgggcctcc ccaggagctg		1777

tggactcagt tcctgacctc tgctttgggg ttcttggggg gggcttgggg tgagtgtagt 1837
 tctggcctag cagcaccctc ttgtggcttg ttctagcgtg tattaaaact tgacacacac 1897
 ccacacacaa aaacaaaaaac accaaaaaaa aaa 1930

<210> 405
 <211> 4232
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (173) .. (1978)

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 gggaaggagc ctggacacag tgacacattc tcaaaggccc tgcaggacca cc atg 175
 Met
 1
 gct tat gat gac tcc gtg aag aaa gaa gat tgt ttt gat ggt gat cat 223
 Ala Tyr Asp Asp Ser Val Lys Lys Glu Asp Cys Phe Asp Gly Asp His
 2 7 12 17
 acc ttt gag gac ata gga ctt gca gct ggc cga agc caa cga gag aaa 271
 Thr Phe Glu Asp Ile Gly Leu Ala Ala Gly Arg Ser Gln Arg Glu Lys
 18 23 28 33
 aaa cgt tct tac aaa gat ttt tta agg gaa gag gaa gaa att gct gct 319
 Lys Arg Ser Tyr Lys Asp Phe Leu Arg Glu Glu Glu Glu Ile Ala Ala
 34 39 44 49
 cag gtc agg aat tct tcc aag aag aag ttg aag gat agt gaa ctt tac 367
 Gln Val Arg Asn Ser Ser Lys Lys Lys Leu Lys Asp Ser Glu Leu Tyr
 50 55 60 65
 ttc ttg ggg acg gac aca cac aag aag aag agg aag cac tcc tct gat 415
 Phe Leu Gly Thr Asp Thr His Lys Lys Lys Arg Lys His Ser Ser Asp
 66 71 76 81
 gat tac tac tat gga gac att tcg tct ttg gaa tcg tca cag aag aaa 463
 Asp Tyr Tyr Tyr Gly Asp Ile Ser Ser Leu Glu Ser Ser Gln Lys Lys
 82 87 92 97
 aag aaa aag tcc agc cca cag tct act gat aca gct atg gac ctg ttg 511
 Lys Lys Lys Ser Ser Pro Gln Ser Thr Asp Thr Ala Met Asp Leu Leu
 98 103 108 113
 aaa gct atc act tcc cca ctg gca gca ggc tcc aag ccc tcc aaa aag 559

Lys	Ala	Ile	Thr	Ser	Pro	Leu	Ala	Ala	Gly	Ser	Lys	Pro	Ser	Lys	Lys	
114					119					124					129	
act	ggg	gag	aaa	tcc	tct	ggc	tct	tca	agc	cat	tcg	gag	agt	aaa	aag	607
Thr	Gly	Glu	Lys	Ser	Ser	Gly	Ser	Ser	Ser	His	Ser	Glu	Ser	Lys	Lys	
130					135					140					145	
gag	cac	cac	agg	aag	aaa	gtc	agt	gga	agc	agt	ggg	gaa	cta	ccc	cta	655
Glu	His	His	Arg	Lys	Lys	Val	Ser	Gly	Ser	Ser	Gly	Glu	Leu	Pro	Leu	
146					151					156					161	
gag	gat	ggg	ggc	tcc	cac	aaa	tcg	aaa	aaa	atg	aaa	cct	ctc	tat	gtg	703
Glu	Asp	Gly	Gly	Ser	His	Lys	Ser	Lys	Lys	Met	Lys	Pro	Leu	Tyr	Val	
162					167					172					177	
aac	aca	gag	aca	ctg	acc	ctt	cgg	gag	cct	gat	ggg	tta	aaa	atg	aaa	751
Asn	Thr	Glu	Thr	Leu	Thr	Leu	Arg	Glu	Pro	Asp	Gly	Leu	Lys	Met	Lys	
178					183					188					193	
ctt	att	ctg	tca	cca	aag	gag	aag	gga	agc	agc	tct	gtt	gat	gag	gag	799
Leu	Ile	Leu	Ser	Pro	Lys	Glu	Lys	Gly	Ser	Ser	Ser	Val	Asp	Glu	Glu	
194					199					204					209	
tct	ttt	caa	tat	ccc	tcc	caa	caa	gcg	act	gtg	aaa	aaa	tcc	tca	aag	847
Ser	Phe	Gln	Tyr	Pro	Ser	Gln	Gln	Ala	Thr	Val	Lys	Lys	Ser	Ser	Lys	
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Lys	Ser	Ala	Arg	Asp	Glu	Gln	Gly	Ala	Leu	Leu	Leu	Gly	His	Glu	Leu	
226					231					236					241	
cag	agc	ttt	ctg	aaa	aca	gcc	cgg	aaa	aag	cac	aag	tca	tcc	tca	gac	943
Gln	Ser	Phe	Leu	Lys	Thr	Ala	Arg	Lys	Lys	His	Lys	Ser	Ser	Ser	Asp	
242					247					252					257	
gca	cat	tca	tct	cct	ggc	cct	gaa	ggc	tgt	ggg	tct	gac	gcc	tcc	cag	991
Ala	His	Ser	Ser	Pro	Gly	Pro	Glu	Gly	Cys	Gly	Ser	Asp	Ala	Ser	Gln	
258					263					268					273	
ttc	gca	gag	tcc	cac	agt	gct	aac	ctt	gat	ctt	tca	ggg	ctt	gaa	cct	1039
Phe	Ala	Glu	Ser	His	Ser	Ala	Asn	Leu	Asp	Leu	Ser	Gly	Leu	Glu	Pro	
274					279					284					289	
att	ctg	gta	gaa	tca	gac	tca	tcc	tct	ggg	ggg	gaa	cta	gag	gct	ggg	1087
Ile	Leu	Val	Glu	Ser	Asp	Ser	Ser	Ser	Gly	Gly	Glu	Leu	Glu	Ala	Gly	
290					295					300					305	
gag	tta	gtg	ata	gat	gat	tct	tac	cga	gaa	atc	aag	aag	aaa	aag	aag	1135
Glu	Leu	Val	Ile	Asp	Asp	Ser	Tyr	Arg	Glu	Ile	Lys	Lys	Lys	Lys	Lys	
306					311					316					321	
tca	aag	aag	agc	aaa	aag	aag	aaa	gac	aag	gag	aag	cat	aaa	gag	aag	1183
Ser	Lys	Lys	Ser	Lys	Lys	Lys	Lys	Asp	Lys	Glu	Lys	His	Lys	Glu	Lys	
322					327					332					337	
cga	cac	tcc	aag	tcc	aag	aga	agt	tta	gga	ctt	tct	gcc	gtg	cca	gtg	1231
Arg	His	Ser	Lys	Ser	Lys	Arg	Ser	Leu	Gly	Leu	Ser	Ala	Val	Pro	Val	

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gga gag gtc aca gtg	aca tct ggc cct cct	ccc agc atc cca tac gct		1279
Gly Glu Val Thr Val	Thr Ser Gly Pro Pro	Pro Ser Ile Pro Tyr Ala		
354	359	364	369	
gga gca gca gca cct	ccc ctg cca ctt cct	ggc ctc cac aca gat ggg		1327
Gly Ala Ala Ala Pro	Pro Leu Pro Leu Pro	Gly Leu His Thr Asp Gly		
370	375	380	385	
cat agt gaa aaa aaa	aaa aaa aaa gag	aag gac aaa gag aga gag		1375
His Ser Glu Lys Lys	Lys Lys Lys Glu	Lys Asp Lys Glu Arg Glu		
386	391	396	401	
aga gga gaa aag cca	aaa aag aag aac atg	tcg gcc tac cag gtg ttc		1423
Arg Gly Glu Lys Pro	Lys Lys Lys Asn Met	Ser Ala Tyr Gln Val Phe		
402	407	412	417	
tgt aaa gag tat cgc	gtg acc att gtg gct	gac cat cca ggt ata gat		1471
Cys Lys Glu Tyr Arg	Val Thr Ile Val Ala	Asp His Pro Gly Ile Asp		
418	423	428	433	
ttt ggg gaa ctt agt	aaa aaa ctg gct gag	gtg tgg aag caa tta cca		1519
Phe Gly Glu Leu Ser	Lys Lys Leu Ala Glu	Val Trp Lys Gln Leu Pro		
434	439	444	449	
gaa aaa gac aaa ctg	att tgg aag caa aaa	gct cag tat ctg cag cac		1567
Glu Lys Asp Lys Leu	Ile Trp Lys Gln Lys	Ala Gln Tyr Leu Gln His		
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aaa cag aac aaa gca	gaa gcc aca act gtg	aaa agg aaa gca tcc agc		1615
Lys Gln Asn Lys Ala	Glu Ala Thr Thr Val	Lys Arg Lys Ala Ser Ser		
466	471	476	481	
tca gaa ggt tcc atg	aaa gtc aaa gcc tct	tct gta gga gta ctg tca		1663
Ser Glu Gly Ser Met	Lys Val Lys Ala Ser	Ser Val Gly Val Leu Ser		
482	487	492	497	
ccc cag aag aag tcc	cca ccc acc acc atg	ctg tta cca gcc tca cca		1711
Pro Gln Lys Lys Ser	Pro Pro Thr Thr Met	Leu Leu Pro Ala Ser Pro		
498	503	508	513	
gcc aaa gcc cct gag	aca gag ccc att gat	gtt gct gct cat ctt cag		1759
Ala Lys Ala Pro Glu	Thr Glu Pro Ile Asp	Val Ala Ala His Leu Gln		
514	519	524	529	
ctg ttg gga gag tcc	cta agc ctc att gga	cac cgt ctg cag gaa act		1807
Leu Leu Gly Glu Ser	Leu Ser Leu Ile Gly	His Arg Leu Gln Glu Thr		
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gag ggt atg gtg gct	gtg tct ggc agt ttg	tca gtg ctt ctg gat tcc		1855
Glu Gly Met Val Ala	Val Ser Gly Ser Leu	Ser Val Leu Leu Asp Ser		
546	551	556	561	
att atc tgt gcc ctt	ggc ccc ttg gca tgt	ctc acc aca caa cta cct		1903
Ile Ile Cys Ala Leu	Gly Pro Leu Ala Cys	Leu Thr Thr Gln Leu Pro		
562	567	572	577	

gaa ttg aat ggc tgt ccc aaa cag gtc ttg tca aac aca tta gac aac	1951
Glu Leu Asn Gly Cys Pro Lys Gln Val Leu Ser Asn Thr Leu Asp Asn	
578 583 588 593	
att gct tac acc acg ccg gga ctg tga cagca aagaatcctg ggacagaaac	2003
Ile Ala Tyr Thr Thr Pro Gly Leu *	
594 599	
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 tacagctgca gccccagag gtctgggtcc ctgacctgt ccaacccat agccatgact 180
 tcttgacaga tgccatcgtg aggaaa atg agc cgg atg ttc tgt cag gct gcg 233
 Met Ser Arg Met Phe Cys Gln Ala Ala
 1 5

 aga gtg gac ctg acg ctg gac cct gac acg gct cac ccg gcc ctg atg 281
 Arg Val Asp Leu Thr Leu Asp Pro Asp Thr Ala His Pro Ala Leu Met
 10 15 20 25
 ctg tcc cct gac cgc cgg ggg gtc cgc ctg gca gag cgg cgg cag gag 329
 Leu Ser Pro Asp Arg Arg Gly Val Arg Leu Ala Glu Arg Arg Gln Glu

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aatttctacc tccatagacc ggccagaatt tagcttcact tgagagagat ctggaatggt	1460
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cttgccctgt cacttcagc tttgcacctc tgctttgatg gctgagggtga actcatgttc	1820
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ccgcgcccgg agcatctccc tggaggaacg gagacaaagg aggattc atg tcc aaa	176
	Met Ser Lys
	1
ggg ctc cca gag acc agg acg gac gca gcc atg tca gag ctg gtg cct	224
Gly Leu Pro Glu Thr Arg Thr Asp Ala Ala Met Ser Glu Leu Val Pro	
4 9 14 19	
gag ccc agg cct aag cca gcg gtg ccc atg aag ccc atg agc atc aac	272
Glu Pro Arg Pro Lys Pro Ala Val Pro Met Lys Pro Met Ser Ile Asn	
20 25 30 35	
tcc aac ctg ctg ggc tac atc ggc atc gac acc atc atc gag cag atg	320
Ser Asn Leu Leu Gly Tyr Ile Gly Ile Asp Thr Ile Ile Glu Gln Met	
36 41 46 51	
cgc aag aag acc atg aag acc ggt ttc gac ttc aac atc atg gtc gtt	368

Arg Lys Lys Thr Met Lys Thr Gly Phe Asp Phe Asn Ile Met Val Val
52 57 62 67

ggc cag agt gga ctg ggc aaa tca acg ctg gtc aac acg ctc ttc aaa 416
Gly Gln Ser Gly Leu Gly Lys Ser Thr Leu Val Asn Thr Leu Phe Lys
68 73 78 83

tcc caa gtg agc cgc aag gcc tcc agc tgg aac cgg gag gag aag atc 464
Ser Gln Val Ser Arg Lys Ala Ser Ser Trp Asn Arg Glu Glu Lys Ile
84 89 94 99

ccc aag aca gtg gag atc aaa gct atc ggg cat gtg ata gag gaa ggc 512
Pro Lys Thr Val Glu Ile Lys Ala Ile Gly His Val Ile Glu Glu Gly
100 105 110 115

ggc gtc aaa atg aag ctg acc gtc atc gac acc cca ggc ttt gga gac 560
Gly Val Lys Met Lys Leu Thr Val Ile Asp Thr Pro Gly Phe Gly Asp
116 121 126 131

caa atc aac aat gaa aac tgc tgg gag ccc att gag aag tac atc aat 608
Gln Ile Asn Asn Glu Asn Cys Trp Glu Pro Ile Glu Lys Tyr Ile Asn
132 137 142 147

gag cag tac gag aag ttc ctg aag gag gag gtc aac atc gcc agg aag 656
Glu Gln Tyr Glu Lys Phe Leu Lys Glu Glu Val Asn Ile Ala Arg Lys
148 153 158 163

aaa cgc atc cct gac act cgt gtc cac tgc tgc ctt tac ttc atc tct 704
Lys Arg Ile Pro Asp Thr Arg Val His Cys Cys Leu Tyr Phe Ile Ser
164 169 174 179

ccc aca gga cac tcc ttg cga cct ctg gat ctt gag ttc atg aaa cac 752
Pro Thr Gly His Ser Leu Arg Pro Leu Asp Leu Glu Phe Met Lys His
180 185 190 195

ctc agc aag gtt gtg aac atc atc cct gtc att gct aag gct gac acc 800
Leu Ser Lys Val Val Asn Ile Ile Pro Val Ile Ala Lys Ala Asp Thr
196 201 206 211

atg acc ctg gag gag aag tct gaa ttc aag caa agg gtt cgc aag gag 848
Met Thr Leu Glu Glu Lys Ser Glu Phe Lys Gln Arg Val Arg Lys Glu
212 217 222 227

ctt gaa gta aat ggc att gaa ttc tac ccc cag aag gaa ttt gat gag 896
Leu Glu Val Asn Gly Ile Glu Phe Tyr Pro Gln Lys Glu Phe Asp Glu
228 233 238 243

gat ttg gag gat aag acg gag aat gac aaa atc agg cag gag agc atg 944
Asp Leu Glu Asp Lys Thr Glu Asn Asp Lys Ile Arg Gln Glu Ser Met
244 249 254 259

cct ttt gct gtg gtg gga agt gac aag gag tac caa gtg aat ggc aag 992
Pro Phe Ala Val Val Gly Ser Asp Lys Glu Tyr Gln Val Asn Gly Lys
260 265 270 275

agg gtc ctc ggc cga aaa act cca tgg ggg atc atc gaa gtg gaa aac 1040
Arg Val Leu Gly Arg Lys Thr Pro Trp Gly Ile Ile Glu Val Glu Asn

276	281	286	291	
ctc aac cac tgt gag ttt gcc ctg ctt cga gac ttt gtc atc agg acc				1088
Leu Asn His Cys Glu Phe Ala Leu Leu Arg Asp Phe Val Ile Arg Thr				
292	297	302	307	
cac ctc cag gac ctc aag gaa gtg aca cac aac atc cac tat gag act				1136
His Leu Gln Asp Leu Lys Glu Val Thr His Asn Ile His Tyr Glu Thr				
308	313	318	323	
tac agg gcc aag cgg ctc aat gac aat gga ggc ctc cct ccg gtg agc				1184
Tyr Arg Ala Lys Arg Leu Asn Asp Asn Gly Gly Leu Pro Pro Val Ser				
324	329	334	339	
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Val Asp Thr Glu Glu Ser His Asp Ser Asn Pro *				
340	345	350		
tgatcatcaca cataccact tcacacacac acatcccaaa taccaccacc aaccaccttc				1294
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	Met	
	1	
ttg cgc tgg ctg cgg gac ttc gtg ctg ccc acc gcg gcc tgc cag gac		163
Leu Arg Trp Leu Arg Asp Phe Val Leu Pro Thr Ala Ala Cys Gln Asp		
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		17
gcg gag cag ccg atg cgc tac gag acc ctc ttc cag gca ctg gac cgc		211
Ala Glu Gln Pro Met Arg Tyr Glu Thr Leu Phe Gln Ala Leu Asp Arg		

18

23

28

33

aat ggg gac gga gtg gtg gac atc ggc gag ctg cag gag ggg ctc agg
 Asn Gly Asp Gly Val Val Asp Ile Gly Glu Leu Gln Glu Gly Leu Arg
 34 39 44 49

259

aac ctg ggc atc cct ctg ggc cag gac gcc gag gag aaa att ttt act
 Asn Leu Gly Ile Pro Leu Gly Gln Asp Ala Glu Glu Lys Ile Phe Thr
 50 55 60 65

307

act gga gat gtc aac aaa gat ggg aag ctg gat ttt gaa gaa ttt atg
 Thr Gly Asp Val Asn Lys Asp Gly Lys Leu Asp Phe Glu Glu Phe Met
 66 71 76 81

355

aag tac ctt aaa gac cat gag aag aaa atg aaa ttg gca ttt aag agt
 Lys Tyr Leu Lys Asp His Glu Lys Lys Met Lys Leu Ala Phe Lys Ser
 82 87 92 97

403

tta gac aaa aat aat gat gga aaa att gag gct tca gaa att gtc cag
 Leu Asp Lys Asn Asn Asp Gly Lys Ile Glu Ala Ser Glu Ile Val Gln
 98 103 108 113

451

tct ctc cag aca ctg ggt ctg act att tct gaa caa caa gca gag ttg
 Ser Leu Gln Thr Leu Gly Leu Thr Ile Ser Glu Gln Gln Ala Glu Leu
 114 119 124 129

499

att ctt caa agc att gat gtt gat ggg aca atg aca gtg gac tgg aat
 Ile Leu Gln Ser Ile Asp Val Asp Gly Thr Met Thr Val Asp Trp Asn
 130 135 140 145

547

gaa tgg aga gac tac ttc tta ttt aat cct gtt aca gac att gag gaa
 Glu Trp Arg Asp Tyr Phe Leu Phe Asn Pro Val Thr Asp Ile Glu Glu
 146 151 156 161

595

att atc cgt ttc tgg aaa cat tct aca gga att gac ata ggg gat agc
 Ile Ile Arg Phe Trp Lys His Ser Thr Gly Ile Asp Ile Gly Asp Ser
 162 167 172 177

643

tta act att cca gat gaa ttc acg gaa gac gaa aaa aaa tcc gga caa
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 178 183 188 193

691

tgg tgg agg cag ctt ttg gca gga ggc att gct ggt gct gtc tct cga
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 194 199 204 209

739

aca agc act gcc cct ttg gac cgt ctg aaa atc atg atg cag gtt cac
 Thr Ser Thr Ala Pro Leu Asp Arg Leu Lys Ile Met Met Gln Val His
 210 215 220 225

787

ggt tca aaa tca gac aaa atg aac ata ttt ggt ggc ttt cga cag atg
 Gly Ser Lys Ser Asp Lys Met Asn Ile Phe Gly Gly Phe Arg Gln Met
 226 231 236 241

835

gta aaa gaa gga ggt atc cgc tcg ctt tgg agg gga aat ggt aca aac
 Val Lys Glu Gly Gly Ile Arg Ser Leu Trp Arg Gly Asn Gly Thr Asn
 242 247 252 257

883

gtc atc aaa att gct cct gag aca gct gtt aaa ttc tgg gca tat gaa	931
Val Ile Lys Ile Ala Pro Glu Thr Ala Val Lys Phe Trp Ala Tyr Glu	
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Gln Tyr Lys Lys Leu Leu Thr Glu Glu Gly Gln Lys Ile Gly Thr Phe	
274 279 284 289	
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Thr Ile Glu Leu Arg Thr Phe Gln Arg Lys Pro Gln Asp Phe Leu Glu	
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 gatccagcct ctggagcctg acagccccac aggcctgtcc gaaaacccaa ctccagccac 3199
 agaaaaactg tttgtgcccc aagaatcaga cacccttttt taccatgccc cacccttttc 3259
 agcaatcaca tttaaaagac agtttatgtg taaactttgc cacaggacat tcaagactgc 3319
 atttagtctt tggagtcacg aacaaacaca caattgaaag accaacactt tttacctatg 3379
 ggaggcagtc cccagatttc aacctgaatt gtgaaatgtg tcataagaaa caaaatattt 3439
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 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (251) .. (799)

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 gaaggggtggc ccgccaggcg ggcgggggtcc atggattcgg ggtgagggcc gtccgcggcc 120
 tcgctttcgc ctctccgag ccgggcccgc gatggccgca gctgtgaggc gagcagaaga 180
 atagaaggaa ggtgatagga tgtgatgata gaatttgtga tagccaagca acaacttttc 240
 ctaattcggc atg tta aaa aat aag ggt cac tca tct aag aaa gat aac 289
 Met Leu Lys Asn Lys Gly His Ser Ser Lys Lys Asp Asn
 1 5 10
 ttg gca gtc aat gca gtt gct tta caa gat cac att tta cat gat ctt 337
 Leu Ala Val Asn Ala Val Ala Leu Gln Asp His Ile Leu His Asp Leu
 14 19 24 29
 caa ctt cga aat ctt tca gtt gca gat cat tct aag aca caa gta caa 385
 Gln Leu Arg Asn Leu Ser Val Ala Asp His Ser Lys Thr Gln Val Gln
 30 35 40 45

aag aaa gag aac aaa tct cta aaa aga gat aca aag gca ata ata gat	433
Lys Lys Glu Asn Lys Ser Leu Lys Arg Asp Thr Lys Ala Ile Ile Asp	
46 51 56 61	
act gga ctt aaa aaa act aca cag tgc ccc aaa cta gaa gac tca gaa	481
Thr Gly Leu Lys Lys Thr Thr Gln Cys Pro Lys Leu Glu Asp Ser Glu	
62 67 72 77	
aaa gaa tat gtt ctt gat ccc aaa ccg ccg ccg ttg act ttg gca cag	529
Lys Glu Tyr Val Leu Asp Pro Lys Pro Pro Pro Leu Thr Leu Ala Gln	
78 83 88 93	
aag ttg ggc ctc att ggg cct cca cca cct cca ctg tca tca gat gaa	577
Lys Leu Gly Leu Ile Gly Pro Pro Pro Pro Pro Leu Ser Ser Asp Glu	
94 99 104 109	
tgg gag aag gtg aaa cag cgc tct ctc ctg caa ggg gac tcc gtg caa	625
Trp Glu Lys Val Lys Gln Arg Ser Leu Leu Gln Gly Asp Ser Val Gln	
110 115 120 125	
cca tgc ccc atc tgt aaa gaa gaa ttc gag ctt cgt cct cag gtg ttt	673
Pro Cys Pro Ile Cys Lys Glu Glu Phe Glu Leu Arg Pro Gln Val Phe	
126 131 136 141	
agc ata cga ggg tgc tgc ttt cat gct ccc atg tgt tcc aca aag cat	721
Ser Ile Arg Gly Cys Cys Phe His Ala Pro Met Cys Ser Thr Lys His	
142 147 152 157	
gtc ttc agg ctt ttg aaa agt tca caa ata aga aaa cct gtc ctc tct	769
Val Phe Arg Leu Leu Lys Ser Ser Gln Ile Arg Lys Pro Val Leu Ser	
158 163 168 173	
gta gaa aga acc agt atc aaa ccc gag tga t acacgatggg gcccgctgt	820
Val Glu Arg Thr Ser Ile Lys Pro Glu *	
174 179	
tcagaatcaa gtgtgtgacc agaatccaag cctactggag aggatgtgtt gttagaaagt	880
ggtacagaaa cctgaggaaa acagtacctc ccacagatgc caagttaaga aaaaaattct	940
ttgaaaaaaa gttcacagaa atcagccacc gcatcctgtg ctcatacaac accaacattg	1000
aagagctctt tgcagaaatc gatcagtgtt tggccataaa tcgaagtgtt cttcagcagt	1060
tgggaagaaaa atgtggccat gagatcacag aagaggaatg ggagaaaatc caagtgcagg	1120
ctctgcgccg ggagaccac gagtgcttca ttctgcctgg cccctctctc cgctgctggc	1180
ggtcagcgcg tgggtgcagg caggcgttcc agagagatgg ccctcctgtc ctgctcacat	1240
gtgttccacc atgctgtgtt gctggcacta gcaggagttc tccgtgggag acaggcctcc	1300
tttccatgcc tgtcctctct gccgatcctg gttccagaat agcattcacg agtgcgtaag	1360
tcatagtcaa gtagagcgag gtcagtctga ggtataaagt tcgccaatcg ttcggtagtg	1420
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<221> CDS
<222> (12) .. (899)
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1345

aaa tta aag aac aaa aga cga cgc tca tta cca cgg cca cat gat ttc	578
Lys Leu Lys Asn Lys Arg Arg Arg Ser Leu Pro Arg Pro His Asp Phe	
174 179 184 189	
ttc gat gca caa aca ctg gat gcg ata aga cat cga gcc ata tgc ttt	626
Phe Asp Ala Gln Thr Leu Asp Ala Ile Arg His Arg Ala Ile Cys Phe	
190 195 200 205	
aac ctc tca gct cat ata gaa agt tta ggg aag gga cac agt gtt gtt	674
Asn Leu Ser Ala His Ile Glu Ser Leu Gly Lys Gly His Ser Val Val	
206 211 216 221	
ttt cat agt cct gta ata gct aag aga aaa gaa gat tct ggg aag atc	722
Phe His Ser Pro Val Ile Ala Lys Arg Lys Glu Asp Ser Gly Lys Ile	
222 227 232 237	
aaa ctt ttg ctt cat tgg atg cct gaa gac att ctg cat gat gtg tgg	770
Lys Leu Leu Leu His Trp Met Pro Glu Asp Ile Leu His Asp Val Trp	
238 243 248 253	
gtg aat gaa agt gaa cga cat cag tta aaa act aaa gta gtt cat tta	818
Val Asn Glu Ser Glu Arg His Gln Leu Lys Thr Lys Val Val His Leu	
254 259 264 269	
tca aag cta ccc aaa gat act gcc ttg ctt ttg gac cca aac ata tac	866
Ser Lys Leu Pro Lys Asp Thr Ala Leu Leu Leu Asp Pro Asn Ile Tyr	
270 275 280 285	
aga aca atg ccg cag aag agg ttg aag agg taa aaaaaaaaaa aaaaa	914
Arg Thr Met Pro Gln Lys Arg Leu Lys Arg *	
286 291 296	

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 <211> 913
 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (18) .. (662)

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Met Asp Asn Ala Gly Lys Glu Arg Glu Ala Val	
1 5	
cag ctg atg gcg gag gcc gag aag cga gtc aag gcc tcc cac tcc ttc	98
Gln Leu Met Ala Glu Ala Glu Lys Arg Val Lys Ala Ser His Ser Phe	
12 17 22 27	
ctc cga ggg ctg ttt gga gga aac aca aga ata gaa gag gct tgt gaa	146
Leu Arg Gly Leu Phe Gly Gly Asn Thr Arg Ile Glu Glu Ala Cys Glu	

28	33	38	43	
atg tat acc aga gct gca aat atg ttc aag atg gct aaa aat tgg agt				194
Met Tyr Thr Arg Ala Ala Asn Met Phe Lys Met Ala Lys Asn Trp Ser				
44	49	54	59	
gct gca gga aac gca ttt tgt cag gca gcc aag ctc cac atg cag ctt				242
Ala Ala Gly Asn Ala Phe Cys Gln Ala Ala Lys Leu His Met Gln Leu				
60	65	70	75	
cag agc aaa cat gac tct gct acc agc ttt gtg gat gct gga aat gct				290
Gln Ser Lys His Asp Ser Ala Thr Ser Phe Val Asp Ala Gly Asn Ala				
76	81	86	91	
tac aaa aag gca gat ccc caa gag gct atc aac tgc tta aat gca gcc				338
Tyr Lys Lys Ala Asp Pro Gln Glu Ala Ile Asn Cys Leu Asn Ala Ala				
92	97	102	107	
atc gac att tac aca gac atg gga agg ttt aca att gca gcc aag cac				386
Ile Asp Ile Tyr Thr Asp Met Gly Arg Phe Thr Ile Ala Ala Lys His				
108	113	118	123	
cac att act att gca gag atc tat gag act gaa ctt gta gac att gag				434
His Ile Thr Ile Ala Glu Ile Tyr Glu Thr Glu Leu Val Asp Ile Glu				
124	129	134	139	
aag gct att gca cat tat gaa caa tct gct gat tat tac aaa gga gaa				482
Lys Ala Ile Ala His Tyr Glu Gln Ser Ala Asp Tyr Tyr Lys Gly Glu				
140	145	150	155	
gaa tcc aac agc tca gca aac aag tgt ctg ctg aag gtg gca gca tat				530
Glu Ser Asn Ser Ser Ala Asn Lys Cys Leu Leu Lys Val Ala Ala Tyr				
156	161	166	171	
gct gcc cag ctt gag cag tac cag aaa gcc att gag atc tat gag cag				578
Ala Ala Gln Leu Glu Gln Tyr Gln Lys Ala Ile Glu Ile Tyr Glu Gln				
172	177	182	187	
gtt ggg gcc aac aca atg gaa tat ccc ttt gtg gaa tac agg cca aag				626
Val Gly Ala Asn Thr Met Glu Tyr Pro Phe Val Glu Tyr Arg Pro Lys				
188	193	198	203	
gat act tct tca aag ctg cct ttt gcc act cta tag agac gagttgaagg				676
Asp Thr Ser Ser Lys Leu Pro Phe Ala Thr Leu *				
204	209	214		
ccagcttgct cttgagaata tgaggaatgt tccagcatta ctgattcaga gatgtaaatt				736
attgaaaaac tctagagctc atgacgacag acagggaact tacctgagca gtgaggattg				796
gtcctatatct gcttgacaga gttgacacat gtggctgac aaagccttcc agggatgaga				856
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<210> 414
 <211> 2047
 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (369) .. (860)

<400> 414
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 ccggggcccc ggcgacgtgg gccgcgcacg gccctggaaa agacgtcgcc tccccttcat 120
 ccgcctctct ctaccgcgc cgtccccgcc tctcgtcct gcgctgcggg ctgaggcgga 180
 acccggaacg gccgtctct tccccgcc tccgcgcct cctccttctc ctctcctcc 240
 tctcctcct ccttctcggc ttctcctca gcccggggc ggagcggggg gtcggcgggc 300
 gccggttcgg gcggcgactc gcgcttctt gggcgggc gcttggccat gtcgtgtcgg 360
 ggaaggta atg agc cgc aga gcc ccg ggg tct cgg ctg agc agc ggc ggc 410
 Met Ser Arg Arg Ala Pro Gly Ser Arg Leu Ser Ser Gly Gly
 1 5 10
 ggc ggc ggc ggc acc aag tat ccg cgg agc tgg aat gac tgg caa ccc 458
 Gly Gly Gly Gly Thr Lys Tyr Pro Arg Ser Trp Asn Asp Trp Gln Pro
 15 20 25 30
 aga act gat agt gca tca gcc gac cca gat aat tta aaa tat tct tca 506
 Arg Thr Asp Ser Ala Ser Ala Asp Pro Asp Asn Leu Lys Tyr Ser Ser
 31 36 41 46
 tcc aga gat aga ggt ggt tct tcc tct tat gga ctg caa cct tca aat 554
 Ser Arg Asp Arg Gly Gly Ser Ser Ser Tyr Gly Leu Gln Pro Ser Asn
 47 52 57 62
 tca gct gtg gtg tct cgg caa agg cac gat gat acc aga gtc cac gct 602
 Ser Ala Val Val Ser Arg Gln Arg His Asp Asp Thr Arg Val His Ala
 63 68 73 78
 gac ata cag aat gac gaa aag ggt ggc tac agt gtc aat gga gga tct 650
 Asp Ile Gln Asn Asp Glu Lys Gly Gly Tyr Ser Val Asn Gly Gly Ser
 79 84 89 94
 ggg gaa aat act tat ggt cgg aag tcg ttg ggg caa gag ctg agg gtt 698
 Gly Glu Asn Thr Tyr Gly Arg Lys Ser Leu Gly Gln Glu Leu Arg Val
 95 100 105 110
 aac aat gtg acc agc cct gag ttc aca agt gtt cag cat ggc agt cgt 746
 Asn Asn Val Thr Ser Pro Glu Phe Thr Ser Val Gln His Gly Ser Arg
 111 116 121 126
 gct tta gcc acc aaa gac atg agg aaa tca cag gag aga tcg atg tct 794
 Ala Leu Ala Thr Lys Asp Met Arg Lys Ser Gln Glu Arg Ser Met Ser
 127 132 137 142

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 <222> (295) .. (465)

<400> 415
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 catctcctgc tggttaccac cttactcatt tctctccaac gatactggcc ttcttggtat 120
 tccttgaaca taccaagtat attctcttgc ctcagggact ttgcttctgc ccttctccat 180
 tcttgggata ctcttctccc agttattctg catgccttcc tcccacacct cttttaaata 240
 tttgctttga agtcaccttc ttatcttttg ccttggtgca ctctgaagg caaa atg 297
 Met
 1

gat cac aag cag ctc tgc tgg agc cac cca caa aaa tct ggc cag agt 345
 Asp His Lys Gln Leu Cys Trp Ser His Pro Gln Lys Ser Gly Gln Ser
 2 7 12 17

tct cgc tct tgt tgc atc tgc tca aac cag cat ggt ctg atc tgg aaa 393
 Ser Arg Ser Cys Cys Ile Cys Ser Asn Gln His Gly Leu Ile Trp Lys
 18 23 28 33

tat agc ctc aat atg tgc ctc cag tgt tgc cat cag tac gtg aag gat 441
 Tyr Ser Leu Asn Met Cys Leu Gln Cys Cys His Gln Tyr Val Lys Asp
 34 39 44 49

ata ggt ttc att aaa ttg gac taa gtgatcttcc ttgaatggat tatccaaggc 495
 Ile Gly Phe Ile Lys Leu Asp *
 50 55

atccacacaa tgaaaaatca tattagctgt ttgtacataa aataaaaatg aagaaaatga 555

agtcaaacga ca 567

<210> 416
 <211> 888
 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (589) .. (858)

<400> 416
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 tatctagcac ttttgtgtct ctggctttgc gcaagggttg ggattggccc ctcaagtccc 120
 gcagagagaa gggactgaac caggagcccc aaggcagggg tctggccctc cagaagatgg 180
 gtcaagagga agagagcoct ccaagagagg agaggcccca gcagagtcca aaggtacagt 240

gttacctgtt taaacaaagg agaaggattt ggggaggctg agacctcaag acctgcttga 300
 ctttgcaccc tatccccagg catctccggg actgctggca gctgccttac aacagagcca 360
 ggaactgagt tgggtaccag ctttgc tcaa aatggtttct accatgaggc cgtggctctc 420
 ttcacccagg ccttgaagct caacccccag gaccaccggt tatttggaaa tcgttccttc 480
 tgccatgagc gggtgggtca gccagcgtgg gccctggctg atgcccaggt ggccttacc 540
 ctacggcctg gctggccccg gggcctcttc cgctgggca aggccttg atg gga cta 597
 Met Gly Leu
 1
 cag cgc ttc aga gag gca gct gct gtg ttt cag gaa act ctg aga ggt 645
 Gln Arg Phe Arg Glu Ala Ala Val Phe Gln Glu Thr Leu Arg Gly
 4 9 14 19
 ggg tcc cag cct gac gca gcc cga gag ctg cgc tct tgc ctt ctg cac 693
 Gly Ser Gln Pro Asp Ala Ala Arg Glu Leu Arg Ser Cys Leu Leu His
 20 25 30 35
 ctg aca ctg cag ggt cag cga gga gga atc tgt gca cca cct ctg tca 741
 Leu Thr Leu Gln Gly Gln Arg Gly Gly Ile Cys Ala Pro Pro Leu Ser
 36 41 46 51
 cct ggg gcc ctg cag cca ctt ccc cat gct gag ctg gca ccc tca ggc 789
 Pro Gly Ala Leu Gln Pro Leu Pro His Ala Glu Leu Ala Pro Ser Gly
 52 57 62 67
 cta cct tcc ctg agg tgc cct cga agc act gct ttg agg tcc cct ggc 837
 Leu Pro Ser Leu Arg Cys Pro Arg Ser Thr Ala Leu Arg Ser Pro Gly
 68 73 78 83
 ctg tct cca ctg ttg cat taa ccataatgtc accgaagcca cccctgtatt 888
 Leu Ser Pro Leu Leu His *
 84 89

<210> 417
 <211> 984
 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (153)..(806)

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gtggagccgc	ctgacaagga	ctgccatcca	cc	atg	gtg	aag	ctg	ggc	tgc	agc	173
				Met	Val	Lys	Leu	Gly	Cys	Ser	
				1				5			
ttc	tct	ggg	aag	cca	ggt	aaa	gac	cct	ggg	gac	221
Phe	Ser	Gly	Lys	Pro	Gly	Lys	Asp	Pro	Gly	Asp	
8					13				18		23
atg	gac	agt	gtg	cct	ctg	atc	agc	ccc	ttg	gac	269
Met	Asp	Ser	Val	Pro	Leu	Ile	Ser	Pro	Leu	Asp	
24					29				34		39
ccg	cca	ctc	cct	gac	cag	gtg	gtc	atc	aag	aca	317
Pro	Pro	Leu	Pro	Asp	Gln	Val	Val	Ile	Lys	Thr	
40					45				50		55
ctg	tcc	tcc	cca	gac	cag	cag	aat	ttc	cct	gac	365
Leu	Ser	Ser	Pro	Asp	Gln	Gln	Asn	Phe	Pro	Asp	
56					61				66		71
ctg	aac	tgc	agc	cac	cca	gag	gaa	ggg	cgc	agg	413
Leu	Asn	Cys	Ser	His	Pro	Glu	Glu	Gly	Arg	Arg	
72					77				82		87
atg	atc	gcc	ttc	gcc	atg	gcg	cta	ctg	ggc	tgc	461
Met	Ile	Ala	Phe	Ala	Met	Ala	Leu	Leu	Gly	Cys	
88					93				98		103
aag	gcc	atc	tgg	tac	gac	cag	ttc	acc	tgc	ccc	509
Lys	Ala	Ile	Trp	Tyr	Asp	Gln	Phe	Thr	Cys	Pro	
104					109				114		119
cgg	cac	aag	atc	tgc	acg	ccg	ctg	acc	ctg	gag	557
Arg	His	Lys	Ile	Cys	Thr	Pro	Leu	Thr	Leu	Glu	
120					125				130		135
atg	gac	ccc	gag	cgc	cac	cgc	agc	atc	ctg	gcg	605
Met	Asp	Pro	Glu	Arg	His	Arg	Ser	Ile	Leu	Ala	
136					141				146		151
ccg	ctg	agc	cgc	aag	cac	ggc	acg	gag	acg	ccg	653
Pro	Leu	Ser	Arg	Lys	His	Gly	Thr	Glu	Thr	Pro	
152					157				162		167
ggc	tac	cgc	gca	gcc	aag	gag	gag	cgc	aag	ggg	701
Gly	Tyr	Arg	Ala	Ala	Lys	Glu	Glu	Arg	Lys	Gly	
168					173				178		183
gcg	gcg	gcg	gcg	gcc	acc	gaa	ccc	ccc	ggg	aag	749
Ala	Ala	Ala	Ala	Ala	Thr	Glu	Pro	Pro	Gly	Lys	
184					189				194		199
gag	aag	gag	gcg	gcg	cgg	aag	gcg	gcc	ggg	agc	797
Glu	Lys	Glu	Ala	Ala	Arg	Lys	Ala	Ala	Gly	Ser	
200					205				210		215
gcg	cag	tga	cgtctcc	agccccgcag	ccccggccccg	gcgtctctccg	ccagctcctg				853

Ala Gln *

216

tgaccagcgc gtctcccgat gctctccgcc gtgttcgtgt cccagggcgc cctcgtgca 913
gccccgcccc cgtgggtctc tgactctgtc gcttttctct aagtaaagat ttcacgtcca 973
aaaaaaaaa a 984

<210> 418

<211> 1538

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (237) .. (1451)

<400> 418

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ggaaggcagc ggcgaggtgc ctccccacgt acccctcgcg ggcccagccg agcaacgtgg 180
ggcgaaggcg gcggcgaagg cccgggctgg gagegttggc ggccggagtc ccagcc 236
atg gcg gag tct gtg gag cgc ctg cag cag cgg gtc cag gag ctg gag 284
Met Ala Glu Ser Val Glu Arg Leu Gln Gln Arg Val Gln Glu Leu Glu
1 5 10 15
cgg gaa ctt gcc cag gag agg agt ctg cag gtc ccg agg agc ggc gac 332
Arg Glu Leu Ala Gln Glu Arg Ser Leu Gln Val Pro Arg Ser Gly Asp
17 22 27 32
gga ggg ggc ggc cgg gtc cgc atc gag aag atg agc tca gag gtg gtg 380
Gly Gly Gly Gly Arg Val Arg Ile Glu Lys Met Ser Ser Glu Val Val
33 38 43 48
gat tcg aat ccc tac agc cgc ttg atg gca ttg aaa cga atg gga att 428
Asp Ser Asn Pro Tyr Ser Arg Leu Met Ala Leu Lys Arg Met Gly Ile
49 54 59 64
gta agc gac tat gag aaa atc cgt acc ttt gcc gta gca ata gta ggt 476
Val Ser Asp Tyr Glu Lys Ile Arg Thr Phe Ala Val Ala Ile Val Gly
65 70 75 80
gtt ggt gga gta ggt agt gtg act gct gaa atg ctg aca aga tgt ggc 524
Val Gly Gly Val Gly Ser Val Thr Ala Glu Met Leu Thr Arg Cys Gly
81 86 91 96
att ggt aag ttg cta ctc ttt gat tat gac aag gtg gaa cta gcc aat 572
Ile Gly Lys Leu Leu Leu Phe Asp Tyr Asp Lys Val Glu Leu Ala Asn
97 102 107 112

atg aat aga ctt ttc ttc caa cct cat caa gca gga tta agt aaa gtt	620
Met Asn Arg Leu Phe Phe Gln Pro His Gln Ala Gly Leu Ser Lys Val	
113 118 123 128	
caa gca gca gaa cat act ctg agg aac att aat cct gat gtt ctt ttt	668
Gln Ala Ala Glu His Thr Leu Arg Asn Ile Asn Pro Asp Val Leu Phe	
129 134 139 144	
gaa gta cac aac tat aat ata acc aca gtg gaa aac ttt caa cat ttc	716
Glu Val His Asn Tyr Asn Ile Thr Thr Val Glu Asn Phe Gln His Phe	
145 150 155 160	
atg gat aga ata agt aat ggt ggg tta gaa gaa gga aaa cct gtt gat	764
Met Asp Arg Ile Ser Asn Gly Gly Leu Glu Glu Gly Lys Pro Val Asp	
161 166 171 176	
cta gtt ctt agc tgt gtg gac aat ttt gaa gct cga atg aca ata aat	812
Leu Val Leu Ser Cys Val Asp Asn Phe Glu Ala Arg Met Thr Ile Asn	
177 182 187 192	
aca gct tgt aat gaa ctt gga caa aca tgg atg gaa tct ggg gtc agt	860
Thr Ala Cys Asn Glu Leu Gly Gln Thr Trp Met Glu Ser Gly Val Ser	
193 198 203 208	
gaa aat gca gtt tca ggg cat ata cag ctt ata att cct gga gaa tct	908
Glu Asn Ala Val Ser Gly His Ile Gln Leu Ile Ile Pro Gly Glu Ser	
209 214 219 224	
gct tgt ttt gcg tgt gct cca cca ctt gta gtt gct gca aat att gat	956
Ala Cys Phe Ala Cys Ala Pro Pro Leu Val Val Ala Ala Asn Ile Asp	
225 230 235 240	
gaa aag act ctg aaa cga gaa ggt gtt tgt gca gcc agt ctt cct acc	1004
Glu Lys Thr Leu Lys Arg Glu Gly Val Cys Ala Ala Ser Leu Pro Thr	
241 246 251 256	
act atg ggt gtg gtt gct ggg atc tta gta caa aac gtg tta aag ttt	1052
Thr Met Gly Val Val Ala Gly Ile Leu Val Gln Asn Val Leu Lys Phe	
257 262 267 272	
ctg tta aat ttt ggt act gtt agt ttt tac ctt gga tac aat gca atg	1100
Leu Leu Asn Phe Gly Thr Val Ser Phe Tyr Leu Gly Tyr Asn Ala Met	
273 278 283 288	
cag gat ttt ttt cct act atg tcc atg aag cca aat cct cag tgt gat	1148
Gln Asp Phe Phe Pro Thr Met Ser Met Lys Pro Asn Pro Gln Cys Asp	
289 294 299 304	
gac aga aat tgc agg aag cag cag gag gaa tat aag aaa aag gta gca	1196
Asp Arg Asn Cys Arg Lys Gln Gln Glu Glu Tyr Lys Lys Lys Val Ala	
305 310 315 320	
gca ctg cct aaa caa gag gtt ata caa gaa gag gaa gag ata atc cat	1244
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Glu Leu Lys Asn Phe Ser Gly Pro Val Pro Asp Leu Pro Glu Gly Ile	
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Thr Val Ala Tyr Thr Ile Pro Lys Lys Gln Glu Asp Ser Val Thr Glu	
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Leu Thr Val Glu Asp Ser Gly Glu Ser Leu Glu Asp Leu Met Ala Lys	
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Val Leu Gly Leu Asp Lys Asn Ala Thr Ser Asp Asp Ile Lys Lys Ser	
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Tyr Arg Lys Leu Ala Leu Lys Tyr His Pro Asp Lys Asn Pro Asp Asn	
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Pro Glu Ala Ala Asp Lys Phe Lys Glu Ile Asn Asn Ala His Ala Ile	
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Leu Thr Asp Ala Thr Lys Arg Asn Ile Tyr Asp Lys Tyr Gly Ser Leu	
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Gly Leu Tyr Val Ala Glu Gln Phe Gly Glu Glu Asn Val Asn Thr Tyr	
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Phe Val Leu Ser Ser Trp Trp Ala Lys Ala Leu Phe Val Phe Cys Gly	
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Leu Leu Thr Cys Cys Tyr Cys Cys Cys Cys Leu Cys Cys Cys Phe Asn	
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Cys Cys Cys Gly Lys Cys Lys Pro Lys Ala Pro Glu Gly Glu Glu Thr	
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Glu Phe Tyr Val Ser Pro Glu Asp Leu Glu Ala Gln Leu Gln Ser Asp	
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[illegible]